Agricultural Research Institute

PUSA

TRANSACTIONS

OF THE

DEPARTMENT OF AGRICULTURE

STATE OF ILLINOIS

WITH REPORTS FROM

COUNTY AGRICULTURAL BOARDS,

FOR THE YEAR 1882

EDITED BY

S. D. FISHER, Secretary.

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SPRINGFIELD:
H. W. Rokker, State Printer and Binder
1883.

LETTER OF TRANSMITTAL.

To His Excellency, John M. Hamilton, *Governor of Illinois:*

Sir—I have the honor to transmit herewith the report of the State Board of Agriculture, for the year 1882; also sundry papers relating to agriculture.

Very respectfully,

S. D. Fisher, *Secretary.*

Springfield, March, 1883.

Members of the Illinois State Board of Agriculture,

FOR 1883-84.

President	JOHN LANDRIGAN	Albion.
Ex-President	J. R. SCOTT	Champaign.
Secretary	S. D. FISHER	Springfield.
Treasurer	JOHN W. BUNN	Springfield.
Chief Clerk	CHARLES F. MILLS	Springfield.

Vice-Presidents:

1st Dist.	J. Irving Pearce	Chicago	11th Dist.	E. B. David	Aledo
2d "	Peter Schuttlor	Chicago	12th "	Allan C. Rush	Pittsfield
3d "	H. G. Savage	Chicago	13th "	J. W. Judy	Tallula
4th "	John P. Reynolds	Chicago	14th "	LaFayette Funk	Shirley
5th "	John Griffith	Batavia	15th "	E. E. Chester.	Champaign
6th "	George S Haskoll	Rockford	16th "	Joseph Skeavington	Albion
7th "	Samuel Dysart	Franklin Grove	17th "	David Gore	Carlinville
8th "	E. C. Lewis	Ottawa	18th "	D. B. Gillham	Upper Alton
9th "	John Virgin	Fairbury	19th "	B. Pullen	Centralia
10th "	D. W. Vittum, Jr.	Canton	20th "	J. M. Washburn	Carterville

LIST OF COUNTIES

Composing Congressional Districts in Illinois.

First District—The First, Second, Third and Fourth wards in the city of Chicago, and the towns of Riverside, Hyde Park, Lake, Lyons, Calumet, Worth, Palos, Lemont, Thornton, Bremen, Orland, Bloom and Rich, in the county of Cook.

Second District—The Fifth, Sixth and Seventh wards in the city of Chicago, and that part of the Eighth ward in the city of Chicago which is south of the center of Polk street and the center of Macalester Place.

Third District—The Ninth, Tenth, Eleventh, Twelfth, Thirteenth and Fourteenth wards in the city of Chicago, and that part of the Eighth ward in the city of Chicago which is north of the center of Polk street and the center of Macalester Place.

Fourth District—The Fifteenth, Sixteenth, Seventeenth and Eighteenth wards in the city of Chicago, and the towns of Lake View, Jefferson, Leyden, Norwood Park, Evanston, Niles, Maine, Elk Grove, Schaumburg, Hanover, New Trier, Northfield, Wheeling, Palatine, Barrington, Cicero and Proviso, in the county of Cook.

Fifth District—Lake, McHenry, Boone, DeKalb and Kane.

Sixth District—Winnebago, Stephenson, JoDaviess, Ogle and Carroll.

Seventh District—Lee, Whiteside, Henry, Bureau and Putnam.

Eighth District—LaSalle, Kendall, Grundy, Will and DuPage.

Ninth District—Kankakee, Iroquois, Ford, Livingston, Woodford and Marshall.

Tenth District—Peoria, Knox, Stark and Fulton.

Eleventh District—Rock Island, Mercer, Henderson, Warren, Hanceck, McDonough and Schuyler.

Twelfth District—Cass, Brown, Adams, Pike, Scott, Greene, Jersey and Calhoun.

Thirteenth District—Tazewell, Mason, Menard, Sangamon, Morgan and Christian.

Fourteenth District—McLean, DeWitt, Piatt, Macon and Logan.

Fifteenth District—Coles, Edgar, Douglas, Vermilion and Champaign.

Sixteenth District—Cumberland, Clark, Jasper, Crawford, Clay, Richland, Lawrence, Wayne, Edwards and Wabash.

Seventeenth District—Macoupin, Montgomery, Shelby, Moultrie, Effingham and Fayette.

Eighteenth District—Bond, Madison, St. Clair, Monroe and Washington.

Nineteenth District—Marion, Clinton, Jefferson, Franklin, Hamilton, White, Saline, Gallatin and Hardin.

Twentieth District—Perry, Randolph, Jackson, Williamson, Union, Johnson, Pope, Alexander, Pulaski and Massac,

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TWENTIETH ANNUAL REPORT

OF THE

ILLINOIS STATE BOARD OF AGRICULTURE.

Meetings During the Fair.

PEORIA HOUSE,
MONDAY, September 25, 1882,
8 o'clock P. M.

Board met in special session.

President Scott in the chair.

Present: President Scott, Vice-Presidents Moore, Snoad, Cobb, Voorhies, David, Haskell, Beaty, Dysart, Judy, Pullen.

The following communication was read:

To the Illinois State Fair Association:

The undersigned, owners and exhibiters at this Fair, respectfully request your honorable body to appropriate funds sufficient to offer two or three awards for the best herd of beef-breeding cattle under two years of age, to consist of one bull and four heifers, and to appoint a day and hour for such exhibition.

C. M. CULBERTSON,
FOWLER & VANNATTA,
THOS. CLARK,
WM. CONSTABLE,
O. K. PARMLEE,
EARL & STUART,
J. H. POTTS & SON,
WM. STEVENSON & SONS,
S. CROFT & BRO.,

Motion of Mr. Cobb carried,

That the consideration of the petition be deferred until the arrival of Mr. Gillham, the Superintendent of Class A, Cattle.

Motion of Mr. Snoad carried,

That the exhibiters of traction engines be permitted to show their engines in front of the amphitheatre on Wednesday, between the hours of 12:30 and 1:30 o'clock P. M.

Motion of Mr. Vittum carried,

That the President appoint a committee of three, to consider the advisability of making an entrance and exit gate on the south side of the Fair Grounds, The President appointed as such committee, Messrs. Vittum, Dysart and Moore.

Motion of Mr. Judy carried,
That the Treasurer be added to the committee.

Motion of Mr. Washburn carried,
That the President be added to the committee, and be made the chairman thereof.

On motion of Mr. Vittum,
The Board adjourned to meet on call of the President.

PEORIA HOUSE,
TUESDAY, September 26, 1882,
8 o'clock P. M.

Board met on call of the President.

The Secretary being absent, J. P. Reynolds was appointed Secretary *pro tem.*

Present: President Scott, Vice-Presidents Emery, Reynolds, Haskell, Moore, Dysart, Snoad, Cobb, Vittum, David, Beaty, Judy, Voorhies, Pullen, Gore and Washburn.

The following action of the Southern Illinois Stock and Agricultural Association, of Chester, was read:

> A special meeting of the Board of Directors of the Southern Illinois Stock and Agricultural Association, of Chester, was held Saturday, September 9, 1882, for the purpose of taking into consideration the feasibility and advantages of forming a County Agricultural Board in connection with the Randolph County Agricultural Board, of Sparta.
>
> After discussion, the following resolutions were offered and adopted:
>
> *Resolved*, That this Association prefers to remain an incorporated body, under the laws of this State, and free from all alliances to the State Board of Agriculture, and therefore declines to form a County Board of Agriculture.
>
> *Resolved*, That this Association relinquish all claims or demands to any and all of the State appropriations that have been withheld by the officers of the State Board of Agriculture on account of a former application of this Association for the same.
>
> *Resolved*, That the Secretary be and is hereby instructed to forward to the officers of the Randolph County Agricultural Board, at Sparta, and the Secretary of the State Board, at Springfield, a copy of the above resolutions, under the seal of this Association.
>
> WM. A. GORDON, Pres.
> [SEAL.] WM. SCHUCHERT, Sec.

Motion of Mr. Washburn carried,
That the Secretary be, and he is hereby instructed, to pay all the State appropriation due the Randolph County Agricultural Board, to the board at Sparta.

The petition of the breeders of Shorthorn and Hereford cattle, requesting an additional herd prize, was discussed.

Motion of Mr. Washburn carried,
That the prayer of the petition be not granted.

Mr. Judy asked for information in regard to the proper ring in which to show an animal which, for example, is two years old on the day previous to the opening of the Fat Stock Show.

Motion of Mr. Washburn carried,

That cattle for the next Fat Stock Show be weighed on November 15, 1882, and that the ages of cattle be determined from that date.

Attention was called to the meeting of the National Agricultural congress, at St. Louis, on Friday, September 29, 1882.

Motion of Mr. Washburn carried,

That Mr. Fulkerson, Vice President of said association for this State, be invited to state the objects of the association.

Mr. Fulkerson called attention to the objects of the congress, and requested the Board to appoint delegates to represent the Congressional districts in this State.

Motion of Mr. Cobb carried,

That the President appoint a delegate to the meeting from each Congressional district.

The President appointed, as said delegates, the following:

1st Dist.	Mark Dunham	DuPage
2d "	D. Worthington	Chicago
3d "	Homer Cook.	Waukegan
4th "	H. W. Carpenter	Rockford
5th "	A. F Brown	Marion.
6th "	Abram Brown.	Dixon
7th "		
8th "	H. A. Bloom.	Kankakee.
9th "	R. H. Whiting.	Peoria
10th "	A. J. Streator	New Windsor
11th "	O. P. Powell	Jerseyville.
12th "	D. W. Smith	Bates.
13th "	J. D. Gillett	Elkhart
14th "	J. H. Pickrell	Harristown
15th "		
16th "	W. H. Russell	Lost Creek.
17th "	M. T. Stookey	Belleville
19th "		

The superintendent of the Rock Island railroad requested that a member of the Board be appointed to take charge of the loading of stock and freight, at the close of the Fair.

Motion of Mr. Judy carried,

That the Superintendent of Grounds be appointed to look after the shipping of stock.

On motion of Mr. David,

Board adjourned, subject to the call of the President.

PEORIA HOUSE,
THURSDAY, September 28, 1882.
8 o'clock P. M.

Board met, on call of President.

Present: President Scott, Ex-President Gillham, Vice Presidents Emery, Snoad, Reynolds, Haskell, Beaty, Moore, Dysart, Cobb, Vittum, Judy, Bishop, Pullen and Landrigan.

The superintendents of departments, as called upon, reported that awards were completed as per programme.

Motion of Mr. Reynolds carried,
That the auditing committee be required to report to the Board the number of each kind of tickets of value issued and received during the Fair.

Motion of Mr. Landrigan carried,
That Wm. Babcock, of Canton, be permitted to appear before the Board.

Mr. Babcock stated that, owing to some mistake, four sucking colts, entered in the Roadster class, were not called into the show ring, when this ring was passed upon.

Mr. Babcock asked that these colts be shown in the ring and passed upon by a committee.

Motion of Mr. Reynolds carried,
That permission be granted, but no further premiums be awarded.

Motion of Mr. Gillham carried,
That a committee of three be appointed to prepare a form of blank, to be filled by exhibiters competing at the Fat Stock Show for the premiums offered in the ring for "cost of production," said statement to give cost and quantity of food consumed and expense for care.

Mr. Landrigan moved to amend by requiring exhibiters to make affidavit as to the correctness of the statement.
Amendment accepted, and motion as amended adopted.

President appointed as said committee, Messrs. Gillham, Reynolds and Beaty.

Mr. Judy moved,
That the judges for the next Fat Stock Show be selected by the standing committee having in charge the arrangements for the show.

Mr. Landrigan moved as a substitute,
That the President appoint a committee of nine to select judges for the Fat Stock Show.
Substitute adopted.

President appointed as said committee Messrs. Landrigan, Gillham, Cobb, Smith, Vittum, Dysart, Moore, Reynolds and Beaty.

Motion of Mr. Dysart carried,
That committeemen serving at the Fat Stock Show be paid $15 for services and furnished transportation.

Motion of Mr. Gillham carried,
That the lumber and other property of the Board on the Fair Grounds be left in charge of the Superintendent of Grounds.

Motion of Mr. Gillham carried,
That the Superintendent of Grounds be instructed to clean the exhibition halls, buildings, stalls and grounds at the expense of the Board.

On motion of Mr. Haskell,
The Board adjourned subject to the call of the President.

JAMES R. SCOTT, President.

S. D. Fisher, Secretary.

CONVENTION OF DELEGATES

FOR THE

ELECTION OF MEMBERS

OF THE

ILLINOIS STATE BOARD OF AGRICULTURE.

FAIR GROUNDS, PEORIA, ILL.
WEDNESDAY, September 27, 1882—2 o'clock P. M.

The convention of delegates for the election of members of the State Board of Agriculture, met at the Secretary's office.

President Scott called the convention to order, and after stating the objects of the meeting, nominated Hon. J. H. Pickrell, of Macon county, as permanent chairman, who was, on motion, unanimously elected.

On motion of Mr. Gore, of Carlinville,

S. D. Fisher, of Springfield, was made Secretary, and Charles F. Mills, of Springfield, Assistant Secretary of the convention.

Mr. Landrigan, of Albion, nominated as teller, E. B. Garrett, of Jasper county.

Mr. Fulkerson, of Jerseyville, nominated as teller, P. D. Cheny, of Jersey county.

Messrs. Garrett and Cheny were elected tellers.

Motion of Mr. Washburn carried,

That each congressional district name a delegate to serve on the committee on credentials.

The following were nominated and elected as members of the committee on credentials:

First District—T. S. Albright, Chicago.
Second District—T. S. Albright, Chicago.
Third District—T. S. Albright, Chicago.
Fourth District—T. S. Albright, Chicago.
Fifth District—Lyman Shelton.
Sixth District—E. L. Cronkrite, Freeport.
Seventh District—David Knight, Bureau.
Eighth District—L. E. Dilman, Joliet.
Ninth District—Wm. J. Fort, Lacon.
Tenth District—D. M. Eiker, Knoxville.
Eleventh District—L. S. Pearsall, Rock Island.
Twelfth District—W. H. Fulkerson, Jerseyville.
Thirteenth District—E. A. Hall, Springfield.
Fourteenth District—C. A. Tatman.
Fifteenth District—E. L. Dunlap.
Sixteenth District—W. C. Garrard.
Seventeenth District—M. L. Houston.
Eighteenth District--D. B. Gillham, Upper Alton.
Nineteenth District--Geo. W. Steagall.

George Pickrell, of Sangamon, introduced the following resolution, which was adopted:

> *Resolved*, That where all the delegates from a county are not present, those in attendance be allowed to cast the full vote of the county, and that there be no changing of votes except on separate roll-call.

The following delegates were reported as entitled to seats in the convention, by the chairman of the committee on credentials:

County.	Delegates.
Adams	R. Seaton, Wm. A Booth, Philip S. Judy
Alexander	W. H. Green, D. T. Linegar, ——— Gates
Boone	A. E. Jenner, Geo. Reed, W. D. Swan
Brown	David K. Watson
Bureau	David Knight, Arthur Bryant, jr., Simon Elliott
Carroll	Don R. Frazer, Geo. M. Wherritt, Ed L. Byington
Cass	W. S. Vance, M Graves, J. B. Stevenson
Champaign	E. E. Chester, E. L. Dunlap, J. R. Scott
Christian	Thornton Hunter, John W. Hunter
Clark	Lewis Smith
Clay	John I. McCawley, Jno. R. Tanner, R. J. Barnes
Clinton	W. H Russell, H. Scnurman, B. Pullen
Cook	T. S. Albright, John C. Euder, Fred Sommer
Crawford	W. C Jones
DeKalb	Edwin Waite
DeWitt	Alfred Sackett, W. W. Kellogg, G. W. Scott
Douglas	W. Howe, T. Lewis, jr., John C. Russell
DuPage	A. S. Landon, C. B Blodgett, Wm. King
Edgar	W O. Wilson, S. Wallace, Wm. Culbertson
Edwards	Jno Landrigan, Geo Baker, Jos. Skeavington
Effingham	J. M. P. Howard
Fayette	M. F. Houston, O. E. Lovett, Alfred Griffith
Ford	W. A. Bicket, Wm. Noel, A. Croft
Franklin	F. M. Youngblood, P. S. Pope, B. E. Webster
Fulton	D. H. Gorham, O. Chatterton, J. M. Stewart
Gallatin	M. M. Pool, C. W. McGehee
Greene	C. I. McCallister, E. V. Baldwin, G. W. Davis
Grundy	Seneca Tupper, H. C. Claypool, W. D. Hitchcock
Hamilton	J. H. Wilson, W. A. McElvain, W. A. Coker.
Hancock	Jas. T. Johnson, E P. Denton, Alfred Fielding
Hardin	John Hetherington, Isaac Hurford, L. F. Plater
Henderson	C. A. Davidson, Thos. G. Ritchey, Paul D. Gibb
Henry	N. B. Gould, S. H. Lay, R. W. Fleming
Iroquois	Wm. M. Coney
Jackson	F. Worthen, G. G. Will
Jasper	W. E. Barrett, E. B. Garrett
Jefferson	J. C. McConnell, J. R. Moss, G. W. Evans
Jersey	Wm. H. Fulkerson, Edward Trabue, P. D. Cheney.
Jo Daviess	Jas. Bayne, J. B. Brown, S. T. Napper

County.	Delegates.
Johnson	A. J. Kuykendall, W. A. Spann, W. A. Looney
Kane	Geo. E. Peck, John Griffith, Samuel Harold.
Kankakee	H. S. Bloom, Lew Small, H. C. Castle.
Kendall	Andrew Welch, G. D. Henning, G. W. Cowdry
Knox	D. M. Eiker, O. L. Campbell, J. L. Cashman
Lake	Homer Cook
LaSalle	W J. Neely, A. M. Hoffman, J. Wood
Lawrence	Edward Schmallhummen, W. T. Buchanan, Samuel Gillespie
Lee	Samuel Dysart, John Yetter, Wm. Moffatt
Livingston	R. C. Straight, Hugh Robinson, F M. Eads
Logan	John W. Eddy, E. Harness, Jno Thomas
Macon	J. H. Pickrell, Thos. M. Taylor, J. G. Willard
Macoupin	David Gore, Wm Childs
Madison	D B. Gillham
Marion	H. N. Woodward, S. E. Stevenson, Samuel Carrigan
Marshall	R. Davidson, W. F Fort, James Smith
Mason	J. M. Ruggles, Francis Low, W. S. Dray
McDonough	James A. Mustain.
McHenry	Fred. Hutch, Jas. Crow, L. W. Sheldon
McLean	D. G. Ryburn, O. Barnard, Jno. A. Ewins
Menard	Fred. Wilkinson, T. C. Pond, L. F. Gramlich
Mercer	J. B. Chandler, James Feaster, A. L Duncan
Montgomery	Samuel Thomas, P. B. Opdyke, Jas. Clark.
Morgan	F. M. Morton, J. M. Dunlap, J R. Megginson
Moultrie	John Millizen, Peter Brown, John H. Dunscomb
Ogle	L Griffin Wm. Phelps, J. L Moore
Peoria	Roswell Bills, R. H. Whiting, H. R. Woodward
Perry	Wm Jackson, James White
Piatt	W. Voorhies, jr., Jesse W. Warner, Horace R. Calef
Pike	Dan C. Bates, Elias Rush, B. B. Hopkins
Pope	J. R. Steagall, Thos. Austin, Thos McCoy
Pulaski	W. R. Crain, C. Hoffner, E. B. Olmstead
Putnam	Joel Hopkins
Randolph	J. C Perkins, Elijah McGuire, W. B. Taylor
Richland	Joseph Wood
Rock Island	M. D. Hauberg Luther Pearsall, Henry Sadoris
Sangamon	Geo Pickrell, E. A. Hall, Jas. A. Winstor
Schuyler	R B. McMaster, John S. Bagley, A. H. Clark
Scott	John Chambers, M. W Riggs, C. S. Doyle
Shelby	L Fisk
Stark	W. W. Buswell, Henry Colwell, Wilson Trickle
Stephenson	J. S. Taggart, E L. Cronkrite, J H. Pierce
Tazewell	D. Sapp, G. W Patton, J. W. Crabb
Union	T F. Bouton, L. J. Hess, J. H. Samson
Wabash	M. D. McClintock
Warren	L. D. Robinson, John Holliday, P R. Parrish
Wayne	Adam Rinard, John Funkhouser, J. R. Creighton
White	Boone Kershaw
Whiteside	J. F. Kerns
Will	Jas. L Owen, L. E. Dillman, W. T. Nelson.
Williamson	W H. Bandy, C. H. Dennison, W. S. Washburn
Winnebago	H. W Carpenter, Samuel Cunningham, Geo. S. Haskell
Woodford	E. S. Fursman, S. S. Stitt, Walter Bennett

The report was adopted, on motion of T. S. Albright of Chicago.

J. W. Hunter, of Christian county, introduced the following resolution, which was adopted:

Resolved, That the convention proceed to the election of a President and a Vice-President from each Congressional District, to constitute the Illinois State Board of Agriculture, for the years 1883 and 1884, as provided by law.

The following were duly elected:

President—John Landrigan, Albion.

VICE-PRESIDENTS.

Dist.	Names.	Post Office.
1	J. Irving Pearce	Chicago
2	Peter Schuttler	"
3	H. G. Savage	"
4	John P Reynolds	"
5	John Griffith	Batavia
6	George S. Haskell	Rockford
7	Samuel Dysart	Franklin Grove
8	E. C. Lewis	Ottawa
9	John Virgin	Fairbury
10	D. W. Vittum, jr.	Canton
11	E. B. David	Aledo
12	Allan C. Rush	Pittsfield
13	J. W. Judy	Tallula
14	LaFayette Funk	Shirley
15	E. E. Chester.	Champaign
16	Joseph Skeavington	Albion
17	David Gore	Carlinville
18	D. B. Gillham	Upper Alton
19	B. Pullen.	Centralia
20	J. M. Washburn	Carterville

Motion of Mr. Gillham carried,

That the thanks of the convention be tendered the officers of the convention for services rendered.

On motion, the convention adjourned *sine die*.

J. H. PICKRELL, President.

S. D. Fisher, Secretary.

Holstein Bull Moore 26 D F H B exhibited by The Unadilla Valley Stock Breeders Association West Edmeston N Y Awarded Sweepstake Premium State Fair [illegible]

LIST OF AWARDS

AT THE

ILLINOIS STATE FAIR FOR 1882.

PEORIA, SEPTEMBER 25-30.

CLASS A—CATTLE.

W. M. SMITH, *Superintendent.*

LOT I.—SHORT-HORNS.—THOROUGHBRED.

BULLS.

Bull 3 years old or over—4 entries:

First premium, S. Croft & Bro., Wenona $25 00
Twilight 31305; calved April 18, 1877; bred by D. G. Ryburn, Randolph; sire, Knightly Hall 23636; dam, Miami 7th, vol. 12.

Second premium, J. H. Potts & Son, Jacksonville 15 00
Master Richmond 33239; red, calved March 4, 1878, bred by J. H. Potts & Son, Jacksonville; sire, Imp. Duke of Richmond 21525; dam, Phyllis of Oakland, by Master Geneva 20368

Bull, 2 years old and under 3—2 entries:

First premium, J. H. Potts & Son, Jacksonville 25 00
Proud Duke 36660; red, calved November 9, 1879; bred by J. H. Potts & Son, Jacksonville; sire, Imp. Duke of Richmond 21525; dam, Fannie Airdrie, by Summit Airdrie 12997.

Second premium, S. Croft & Bro., Wenona 15 00
Lord Booth 39654; calved February 28, 1880; bred by Hixon, Earl & Raub, Earl Park, Ind.; sire, 1st Duke of Benton 22682; dam, Caneva, vol. 14.

Bull, 1 year old and under 2—3 entries:

First premium, Pickrell, Thomas & Smith, Harristown 20 00
Airdie Lad 2d; calved October 27, 1880; bred by Thomas & Smith, North Middleton, Ky.; sire, Airdie Thorndale 37420; dam, Beck Taylor 7th, by 3d Cambridge Rose Duke 22296.

Second premium, J. H. Potts & Son, Jacksonville 10 00
Royal Commander 5th; red; calved March 30, 1881; bred by J. H. Potts & Son, Jacksonville; sire, Royal Commander 36878; dam, Almeda Lewis, by Imp. Flower Lad 23170.

Bull, under 1 year old—3 entries:

First premium, J. H. Potts & Son, Jacksonville 15 00
Charlotte Duke; red, with some white; calved January 6, 1882; bred by J. H. Potts & Son, Jacksonville; sire, Imp. Duke of Richmond 21525; dam, Queen Charlotte 14th, by Starlight 11018.

Second premium, Wm. Peterson, Stark 10 00

COWS.

Cow, 4 years old or over—7 entries:
First premium, J. H. Potts & Son, Jacksonville $25 00
Annabel Lee; red; bred by S. F. Lockridge, Greencastle, Ind.; calved November 15, 1875; sire, Imp Lord Strathallan 17591; dam, Cora Lee, by Burnside 4618.
Second premium, Pickrell, Thomas & Smith, Harristown 15 00
Eddie Hulse 2d; calved April 19, 1877; bred by Thomas & Smith, North Middleton, Ky.; sire, 24th Duke of Goodness; dam, Eddie Hulse, by Frank Hunt 5650.

Cow, 3 years old and under 4—1 entry:
First premium, S. Croft & Bro., Wenona 25 00
Pride of Red Wood; calved December 20, 1878; bred by S. Croft & Bro., Wenona; sire, Knightly Hall 23636; dam Geneva Lass, vol. 15.

Heifer, 2 years old and under 3—5 entries:
First premium, Wm. Stevenson & Sons, Little Indian 25 00
Abbie Oxford, vol. 22, A. H. B.; calved December 27, 1879; bred by W. M. Stevenson & Sons, Little Indian; sire, Imp. Canadian Prince 31931; dam, Ida Oxford; vol. 17, A. H. B.
Second premium, Pickrell, Thomas & Smith, Harristown 15 00
Airdrie Mary 4th; calved March 10, 1880; bred by Thomas & Smith, North Middleton, Ky.; sire, 3d Cambridge Rose Duke 22296; dam, Airdie Mary, by Airdie 2478.

Heifer, 1 year old and under 2—8 entries:
First premium, J. H. Potts & Son, Jacksonville 20 00
Louisa of Oakland; red; bred by James I Davidson, Balsam, Canada; calved January 2, 1881; sire, Imp. Royel Brampton 32996; dam, Louisa 8th, by Crown Prince of Athelstane 2d 16585.
Second premium, S. Croft & Bro., Wenona 10 00
Orange Blossom; calved October 28, 1880; bred by J. B. Ryburn, Bloomington; sire, Ben Franklin 28624; dam Mary Prior, by Knightly Hall 23636.

Heifer, under 1 year old—6 entries:
First premium, Wm. Stephenson & Sons, Little Indian 15 00
Beauty, vol 22, A. H. B.; calved November 4, 1881; bred by Wm. Stevenson & Sons, Little Indian; sire, Rural Duke 24747; dam, Lena Rivers 2d, vol. 17, A. H. B.
Second premium, Pickrell, Thomas & Smith, Harristown 10 00
Beck Beaumont 3d; calved March 10, 1880; bred by James Mix, Kankakee; sire, Beaumont 22095; dam, Beck Oxford, by Oxford Languish 20550.

Awarding Committee.—L. O. Gillham, Alton; H. Tunison, White Hall; William Dysart, Franklin Grove.

LOT 2—SHORTHORNS—THOROUGHBRED—HERD.

Herd—Bull, 2 years old or over; cow, 3 years old or over; heifer 2 years old and under 3; heifer, 1 year old and under 2; heifer, under 1 year old—4 entries:
Premium, J. H. Potts & Son, Jacksonville $50 00
Master Richmond 33239; Emma 4th; Red Lady of Oakland; Louisa of Oakland; Fannie Airdrie 4th.

Awarding Committee.—W. Scott, Wyoming; F. W. Beardsley, Gibson City; H. M. Sisson, Galesburg.

LOT 3—SHORTHORNS—THOROUGHBRED—SWEEPSTAKES.

Bull of any age—8 entries:
Premium, J. H. Potts & Son, Jacksonville $50 00
Proud Duke 36660.

Cow, or heifer of any age—12 entries:
Premium, J. H. Potts & Son, Jacksonville 50 00
Emma 4th; red; calved September 12 1878; bred by J. H. Potts & Son, Jacksonville; sire, Frederick William (28,195); dam, imp. Emma 3d, by Young Englishman (31,113.)

Awarding Committee—S. B. Burchard, Kankakee; James McLun, Rural Dale, O.; B. F. Funk, Bloomington; A. H. Fuller, Freedom.

LOT 4—HEREFORDS—THOROUGHBRED.

BULLS.

Bull, 3 years old or over—3 entries:
First premium, Wm. Constable, Beecher.......... $25 00
Hero (5.964); calved June 17, 1879; bred by John Price, Court House, Pembridge, Herefordshire; sire, Regulus (4076); dam, Spot, by Horace 2d (4665.)
Second premium, Thos. Clark, Beecher.......... 15 00
Anxiety 3d, alias Sir Garnet (6181); calved July 3, 1879; bred by T. J. Carwardine, Stocktonbury, Leominster, Eng.; sire, Anxiety (5188); dam, Tiny.

Bull, 2 years old and under 3—4 entries:
First premium, Earl & Stuart, Lafayette, Ind.......... 25 00
Royal 16th (6655); calved April 15, 1880; bred by J. B. & G. H. Green, Warlow, Eng.; sire, Chieftain (4427); dam, Lady 8th, by Zealous (2349).
Second premium, Fowler & Van Natta, Fowler, Ind.......... 15 00
Tregrehan; calved October 3, 1879; bred by I. Powell; sire, Assurance.

Bull, 1 year old and under 2—4 entries:
First premium, Fowler & Van Natta, Fowler, Ind.......... 20 00
Anxiety 5th; calved November 5, 1880; bred by C. M. Culbertson, Chicago; sire, imp. Anxiety (5188); dam, Nancy 2d, 4646.
Second premium, Charles K. Parmalee, Wolcott, Ind.......... 10 00
Anxiety (IV) 4th; calved November 2, 1880; bred by C. M. Culbertson, Chicago; sire, Anxiety 2238; dam, Cherry 24th, 2410.

Bull, under 1 year old—6 entries:
First premium, Earl & Stuart, Lafayette, Ind.......... 15 00
Jumbo; calved October 21, 1881; bred by Wm. Thomas, Sully, Cardiff, Eng.; sire, County Member (6372); dam, Lady 3d, by Horace 2d (4655).
Second premium, Wm. Constable, Beecher.......... 10 00
Curly; calved November 29, 1881; bred by Wm. Constable, Beecher; sire, Hero (5964); dam, Alice.

COWS.

Cow, 4 years old or over—5 entries:
First premium, C. M. Culbertson, Chicago.......... 25 00
Downton Rose, Imp.; calved July 26, 1877; bred by T. Fenn, Stonebrook House, Ludlow, Eng.; sire, Blakemore (5227; dam, Rose of the Teme, by Silver Chief (4952).
Second premium, Earl & Stuart, Lafayette, Ind.......... 15 00
Lady III.; calved September 21, 1877; bred by Wm. Thomas, Sully, Cardiff, Eng.; sire, Horace 2d (4655); dam, Lady 2d, by Sir John 3d (3456).

Cow 3 years old and under 4—4 entries:
First premium, C. M. Culbertson, Chicago.......... 25 00
Juliett; calved July 7, 1879; bred by T. J. Carwardine, Stocktonbury, Leominster, Eng.; sire, Anxiety (5188), dam, Roseline.
Second premium, Thomas Clark, Beecher.......... 15 00
Fancy; calved May 7, 1879; bred by Wm. Constable, Beecher; sire, Seventy Seven (1091); dam, Modest (1541.)

Heifer, 2 years old and under 3—6 entries:
First premium, Earl & Stuart, Lafayette, Ind.......... 25 00
Venus; calved July 9, 1880; bred by T. J. Carwardine, Leominster, Eng.; sire, Lord Wilton (4740); dam, Damsel, by Longhorns (4711.)
Second premium, Thomas Clark, Beecher.......... 15 00
Peerless; calved May 24, 1880; bred by T. J. Carwardine, Stocktonbury, Leominster, Eng.; sire, Lord Wilton (4740); dam, Delight.

Heifer, 1 year old and under 2—12 entries:
First premium, Earl & Stuart, Lafayette, Ind.......... 20 00
Delight 2d, calved March 16, 1881; bred by T. J. Carwardine, Leominster, Eng.; sire, Lord Wilton (4740); dam, Delight, by Sir Frank, 2762.
Second premium, Fowler & Van Natta, Fowler, Ind.......... 10 00
Fancy; calved November, 1880; bred by T. E. Miller, Beecher; sire, Sir Richard 2d (4984); dam, Victoria 1053.

Heifer under 1 year old—10 entries:
First premium, Wm. Constable, Beecher.......... 15 00
Young Mary; calved October 6, 1881; bred by Wm. Constable, Beecher; sire, Hero (5964); dam, Lady Iowa.
Second premium, C. M. Culbertson, Chicago.......... 10 00
Rachel; calved November 26, 1881; bred by C. M. Culbertson, Chicago; sire, Sir Garnet (6180); dam, Clover, 2151.

Awarding Committee—L. S. Coffin, Fort Dodge, Iowa; J. L. Briggs, Lisle; O. A. Bridgeford, Joy.

LOT 5—HEREFORDS—THOROUGHBRED—HERD.

Herd—Bull 2 years old or over, cow 3 years old or over, heifer 2 years old and under 3, heifer 1 year old and under 2, heifer, under 1 year old—4 entries.

Premium, Earl & Stuart, Lafayette, Ind $50 00

Royal 16th; Lady III; Venus; Pretty Maid; Erda

Awarding Committee—J. B. Kearns, Garden Plain; Alex. Charles, Cedar Rapids, Iowa; D. G. Book, Sterling.

LOT 6—HEREFORDS—THOROUGHBREDS—SWEEPSTAKES.

Bull of any age—9 entries:

Premium, Wm. Constable, Beecher $50 00

Hero, 5964.

Cow or heifer of any age—7 entries:

Premium, C. M. Culbertson, Chicago 50 00

Downton Rose

Awarding Committee—J. H. Pickrell, Harristown; T. M. Thornburg, Bloomington; S. T Nappy, Scales Mound.

LOT 7—DEVONS—THOROUGHBRED.

BULLS.

Bull, 3 years old or over—1 entry

First premium, D J. Whitmore, Casstown, O $25 00

Barefoot, 272; calved April 22, 1873; bred by J Buckingham, Zanesville, O.; sire, Barona, 280; dam, Helena 28th, 1434.

Bull, 2 years old and under 3—1 entry

First premium, Wm Younger, Fairbury 25 00

Remus, 2118, calved February 15, 1880, bred by L. F. Ross, Avon, sire, Shelto 2d, 1338, dam, Orphan Girl, 1967.

Bull, under 1 year old—1 entry

First premium, D J Whitmore, Casstown, O 15 00

Bozarris, calved December, 1881, bred by D. J. Whitmore, Casstown, O.; sire, Bouncer, 2088; dam, Zilpha, 2749.

COWS.

Cow, 4 years old or over—5 entries:

First premium, Wm. Younger, Fairbury 25 00

Lady May 2d, 1759; calved March 7, 1874; bred by D. C May, Rochelle; sire, Hamilton, 645; dam, Lady May, 1758

Second premium, D. J Whitmore, Casstown, O 15 00

Kitty Clover, 1684, calved June 10, 1871, bred by J. J. Scaiff, New Carlisle, O.; sire, Bounty, 334; dam, Pink, 2242.

Cow, 3 years old and under 4—2 entries:

First premium, D. J. Whitmore, Casstown, O 25 00

Lillith, 3195; calved February 27, 1879; bred by D. J. Whitmore, Casstown, O.; sire, Barefoot, 272; dam, Kitty Clover, 1684.

Second premium, D J Whitmore, Casstown, O 15 00

Gertrude, calved February 21, 1879; bred by D. J. Whitmore, Casstown, O.; sire, Barefoot, 272; dam, Rose 3d, 2450.

Heifer, 2 years old and under 3—2 entries:

First premium, Wm. Younger, Fairbury 25 00

Roxy, 3840; calved May 25, 1880; bred by Wm. Younger, Fairbury; sire, Colonel Ryan, 410; dam, Lady May 2d, 1759.

Second premium, D. J Whitmore, Casstown, O 15 00

Missouri, 3190; calved October 13, 1879; bred by D. J. Whitmore, Casstown, O.; sire, Barefoot, 272; dam, Winnie 2700.

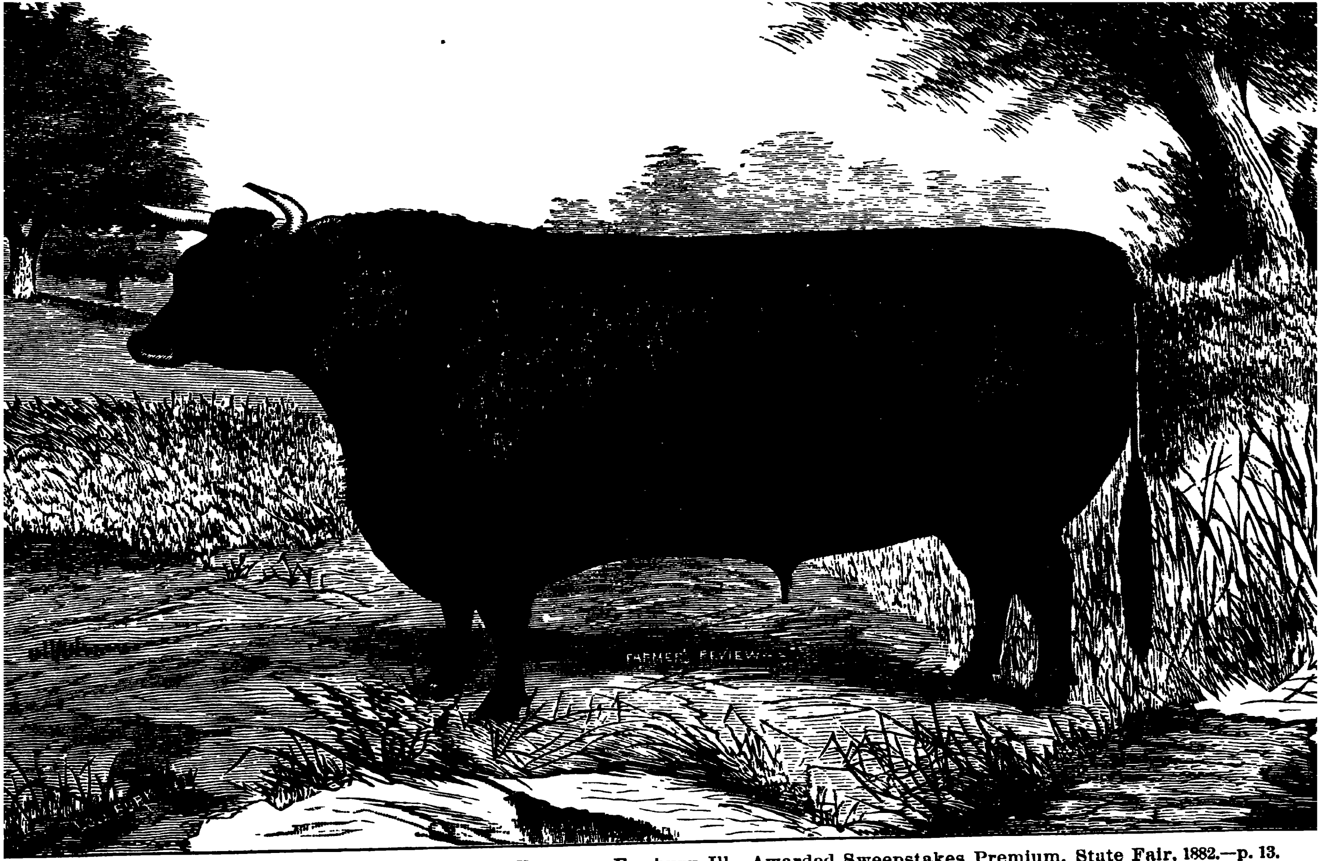
Heifer, 1 year old and under 2—3 entries:

First premium, Wm. Younger, Fairbury 20 00

Fanny Hill, 3839; calved April 14, 1881; bred by Wm. Younger, Fairbury; sire, Colonel Ryan, 410; dam, Lady Ross, 2443.

Second premium, D. J. Whitmore, Casstown, O 10 00

Bertha E.; calved January 27, 1881; bred by D. J. Whitmore, Casstown, O.; sire, Elgin, 531; dam, Nina, 2152.



Devon Bull, Remus 2118, exhibited by WILLIAM YOUNGER, Fairbury, Ill. Awarded Sweepstakes Premium, State Fair, 1882.—p. 13.

Heifer, under 1 year old—3 entries:
First premium, Wm. Younger, Fairbury $15 00
Chloe; calved March 1, 1882; bred by Wm. Younger, Fairbury; sire, Remus, 2118; dam, Pearl, 2213.
Second premium, D. J. Whitmore, Casstown, O 10 00
Beulah; calved May 13, 1882; bred by D. J. Whitmore, Casstown, O.; sire, Barefoot, 272; dam, Queen Emma, 2315.

Awarding Committee—W. S. Van Natta, Fowler, Ind.; Joseph Wood, Albion; John W. Hunter, Owaneco.

LOT 8—DEVONS—THOROUGHBRED—HERD.

Herd—Bull, 2 years old or over; cow, 3 years old or over; heifer, 2 years old and under 3; heifer 1 year old and under 2; heifer, under 1 year old—2 entries.
Premium, Wm. Younger, Fairbury $50 00
Remus, 2118; Lady May II, 1759; Roxy, 3840; Fannie Hill, 3839; Chloe.

Awarding Committee—J. H. Spears, Tallula; R. Huston, Blandinsville; Alex. Char [illegible], Cedar Rapids, Iowa.

LOT 9—DEVONS—THOROUGHBRED—SWEEPSTAKES.

Bull, of any age—2 entries.
Premium, Wm. Younger, Fairbury $50 00
Remus, 2118.

Cow or heifer of any age—4 entries:
Premium, D. J. Whitmore, Casstown, O 50 00
Kitty Clover, 1684.

Awarding Committee—J. E. Wakefield, Heyworth; W. A. Pratt, Elgin; James McLun, Rural Dale, Ohio.

LOT 10—POLLED ANGUS—THOROUGHBRED. No entries.

LOT 11—POLLED ANGUS—THOROUGHBRED—HERD. No entries.

LOT 12—POLLED ANGUS—THOROUGHBRED—SWEEPSTAKES. No entries.

LOT 13—HOLSTEINS—THOROUGHBRED.

Bull, 3 years old or over—2 entries:
First premium, Unadilla Val. Stock Breeders' Ass'n, West Edmeston, N. Y. $25 00
Movie, (26), D. F. H. B., Imp.; calved March 20, 1878.
Second premium, W. A. Pratt, Elgin 15 00
Cyclone.

Bull, 2 years old and under 3—1 entry:
First premium, Unadilla Val. Stock Breeders' Ass'n, West Edmeston, N. Y. 25 00
Paul Twist 22, D. F. H. B.; calved March 4, 1880; bred by Unadilla Val. Stock Breeders' Ass'n, West Edmeston, N. Y.; sire, Paul Potter 2; dam, Maid of Twisk 1.

Bull, 1 year old and under 2—1 entry:
First premium, W. A. Pratt, Elgin 20 00

Bull, under 1 year old—2 entries:
First premium, Unadilla Val. Stock Breeders' Ass'n, West Edmeston, N. Y. 15 00
Van Eijsinza, 101, D. F. H. B.; calved February 15, 1882; bred by Unadilla Valley Stock Breeders' Stock Ass'n, West Edmeston, N. Y.; sire, Movie, 26; dam, Cjietje Blecker, 5.
Second premium, W. A. Pratt, Elgin 10 00
Walter P.

Cow, 4 years old or over—5 entries:
First premium, W. A. Pratt, Elgin $25 00
Duchess of York.
Second premium, Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y. .. 15 00
Jacoba Hartog, (2), D. F. H. B., Imp.; calved March 1, 1874; bred by Jacob Hartog.

Cow, 3 years old and under 4—3 entries:

First premium, Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y. .. $25 00
Jacoba Hartog 3d, 166, D. F. H. B.; calved May 4, 1879; bred by Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y.; sire, Burgomaster of Beemster, 1; dam, Jacoba Hartog, 2.

Second premium, W. A. Pratt, Elgin ... 15 00
Galaxy III

Heifer, 2 years old and under 3—2 entries

First premium, Unadilla Valley Stock Breeders' Ass'n, West Edmiston, N. Y ... 25 00
Jacoba Hartog 4th, 169, D F H. B; calved April 27, 1880; bred by Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y.; sire, Burgomaster of Beemster: dam, Jacoba Hartog, 2.

Second premium, W. A. Pratt, Elgin ... 15 00
Mrs Hagar.

Heifer, 1 year old and under 2—3 entries.

First premium, Unadilla Valley Stock Breeders' Ass'n, West Edmeston N. Y. ... 20 00
Kleitorp 4th, 49, D. F. H. B., calved April 29, 1881; bred by Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y; sire, Movie, 26; dam, Kleitorp, 70.

Second premium, W A. Pratt, Elgin ... 10 00
Countess of Flanders 5th.

Heifer under 1 year old—4 entries

First premium, Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y..... 15 00
2d Unadilla Twisk, 51, D. F. H. B, calved November 26, 1881; bred by Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y.; sire, Hendrik, 28; dam, Unadilla Twisk, 32.

Second premium, Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y. 10 00
Nette Griet, 252, D. F H B; calved March 27, 1882; bred by Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y; sire, Movie, 26; dam, Jourskje, 113.

Awarding Committee—R. R Stevenson, Little Indian; O J. Bailey, Peoria, C. H. Huggins, Gilson.

LOT 14—HOLSTEINS—THOROUGHDRED—HERD.

Herd—Bull 2 years old or over, cow 3 years old or over, heifer 2 years old and under 3, heifer 1 year old and under 2, heifer under 1 year old—2 entries

Premium, Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y... ..... $50 00
Movie, (26); Jacoba Hortog, (2), Jacoba Hartog 4th, (169); Kleitorp 4th, (49), Unadilla Twisk (260), calf

Awarding Committee—V. Barber, Decatur, G. E. Marrow, Champaign; J. M. Forbes, Henry.

LOT 15—HOLSTEINS—THOROUGHBRED—SWEEPSTAKES.

Bull of any age—2 entries

Premium, Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y.......... $50 00
Movie, (26), D. F. H. B.

Cow or heifer of any age—4 entries:

Premium, Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y........... 50 00
Jacoba Hartog, (2), D. F. H B.

Awarding Committee—A. Joffery, LaSalle; R. H. Whiting, Peoria; W. C. Norton, Aldenville, Penn.

LOT 16—JERSEYS—THOROUGHBRED.

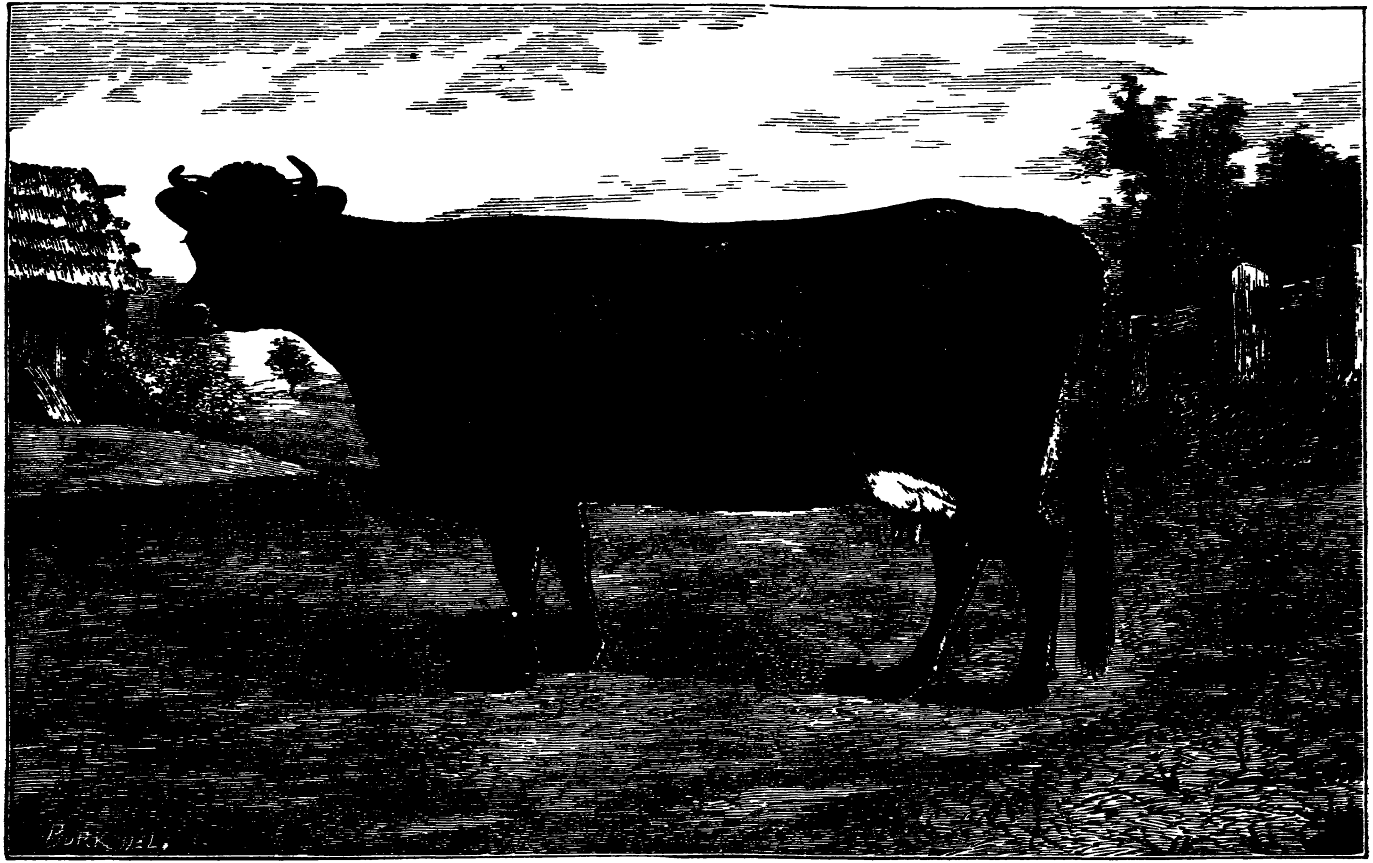
Bull, 3 years old or over—1 entry:

Premium, W. L. Gardiner, Norwalk, O ... $25 00
Mor ar, 2198; calved April 23. 1877; bred by H. Mead; sire, Mercury, (432); dam, Hera, (2565).

Bull, 2 years old and under 3—3 entries:

First premium, D. H. & S. S. Tripp, Peoria ... 25 00
Peoria Chief, (4984); calved February 6. 1880; bred by C. V. Holder; sire, Col. Butler, (1561); dam, Pomare, (6008).

Second premium. O. J. Bailey, Peoria ... 15 00
Zuda's Brother, A. J. C. R., 6490; calved February 25, 1880; bred by C. R. C. Dye; sire, Glen Roy, 2131; dam, Hesper Martin, 4839.



Jersey Cow, Trickett 11249, exhibited by O J. BAILEY Peoria, Ill. Awarded Sweepstakes Premium, State Fair, 1882.—p. 15.

Bull, 1 year old and under 2—4 entries:

First premium W. L. Gardiner, Norwolk, O. $20 00

Royal Rex, 6007; calved October 13, 1880, bred by J. D. Gridley, Conn ; sire, Rex, 1330· dam, Carrie Clark

Second premium, J. B. Allen & Son, Delavan 10 00

Royal Prophet, 7140, calved February 11, 1881, bred by J. B. Allen & Son, Delavan; sire, Royalist 3d (4500); dam, Tamora, (5342).

Bull, under 1 year old—10 entries

First premium, D. H & S. S Tripp, Peoria 15 00

Colonel Frost, (7099), calved October 12, 1881; bred by D. H. & S. S. Tripp, Peoria; sire, Peoria Chief, (4984), dam, Nellie Cook (11156).

Second premium, D. H. & S. S Tripp, Peoria 10 00

Plomino (7100); calved January 26, 1882, bred by D. H. & S. S Tripp, Peoria; sire, Imp. Prince of Glenwood (3190); dam, Pomare (6003).

COWS.

Cow 4 years old or over—14 entries:

First premium, D H. & S. S Tripp, Peoria 25 00

Pomare (6003); calved December 29, 1876; bred by R. C. Patterson, Patterson, N. Y., sire, Mopsus (1165); dam, Salica (2456).

Second premium, O J. Bailey, Peoria 15 00

Daisy of Deerfoot 3d, 4932; calved July 21, 1875; bred by E Burnett, Southborough, Mass.; sire, Albion, 490; dam, Daisy of Deerfoot, 3182.

Cow 3 years old and under 4—5 entries

First premium, O. J. Bailey, Peoria 25 00

Trickett, 11249; calved June 7, 1879, bred by A. H. Miller, Middleton, Conn.; sire, Ned Ives, 3631; dam, Miller's Cassie 5280.

Second premium, D. H. & S. S. Tripp, Peoria. 15 00

Mary Hester (9122) calved August 24, 1879; bred by J R. Crane, Washington, Ill ; sire, Col. Butler, Jr. (3491); dam, Leva Antha (6088).

Heifer 2 years old and under 3—8 entries:

First premium, D. H & S. S Tripp, Peoria 25 00

Marea (10167); calved March 26 1880; bred by Mrs. J. B. Ritzinger, Indianapolis, Ind.; sire, LeBrocq's Prize (3350); dam, Mamie Coburn (3798).

Second premium, O. J Bailey, Peoria 15 00

Flirtation, 11944, calved May 5, 1880; bred by J. C. Jackson, Hartford, Conn.; sire, Wallenstein, 2261; dam, Ariadne, 7516.

Heifer 1 year old and under 2—12 entries

First premium, J B. Allen & Son, Delavan 20 00

Hopestill, 15156; October 16, 1880, bred by J. B. Allen & Son, Delavan; sire, Royalist 3d (4500); dam, Queen Tamora (9563).

Second premium, D. H. & S. S Tripp, Peoria 10 00

Annie's Orphan (12067); calved October 10 1880; bred by Beech Grove Farm, Ingallston, Ind.; sire, LeBrocq's Prize (3350); dam, Annie Chunder (4233).

Heifer under 1 year old—10 entries

First premium, O. J. Bailey, Peoria 15 00

Miss Madann, 14205; calved October 2, 1881; bred by J Lucas Turner, Normandy, Mo ; sire, Duke of Normandy 3446; dam, Baisey, 8077.

Second premium, D H. & S S. Tripp, Peoria 10 00

Virgie Gray (16545); calved April 30, 1882; bred by D. H. & S. S. Tripp, Peoria; sire, Peoria Chief (4984); dam, Carrie Gray (11157).

Awarding Committee—W. A. Pratt, Elgin, A. C Hammond, Warsaw; J. R. Gaston, Normal; Jno. M. Pearson, Godfrey; V. Barber, Decatur.

LOT 17—JERSEYS—THOROUGHBRED—HERD.

Herd—Bull 2 years old or over, Cow 3 years old or over, Heifer 2 years old and under 3, Heifer 1 year old and under 2, Heifer under 1 year old—3 entries:

Premium, D. H & S. S. Tripp, Peoria. $50 00

Peoria Chief (4984); Pomare, 6003; Marea, 10167; Annie's Orphan (12067); Nadenette, (15519).

Awarding Committee—John M. Pearson, Godfrey; J. G. Clark, Champaign; V. Barber, Decatur.

LOT 18—JERSEYS—THOROUGHBRED—SWEEPSTAKES.

Bull of any age—11 entries:

Premium, D H. & S. S. Tripp, Peoria $50 00

Peoria Chief (4984).

Cow or Heifer of any age—16 entries.

Premium, O. J. Bailey, Peoria 50 00

Trickett, 11249.

Awarding Committee—A. T. McElhiney, Bloomington; R. B. Frary, LaMoille; T. B. Stewart, Blackberry.

LOT 19—AYRSHIRES—THOROUGHBRED.

Bull 3 years old or over—5 entries:
First premium, T. E. Wight, Millbury, O $25 00
Ohio Champion, 1874; calved August 29, 1877; bred by A. J. Wilson, LaPorte, O.; sire, Lorain, 681; dam, Nonesuch, 3018.
Second premium, Ormiston & Jardine, Cuba, N. Y 15 00
Mars 1st, 887; calved October 5, 1873; bred by John McIntire, Bromley, P. Q., Canada; sire, Imp. Abbot, 738; dam, Cuthberta 7th, 1769.

Bull 2 years old and under 3—1 entry
First premium, Ormiston & Jardine, Cuba, N. Y 25 00
William Mars, 967; calved October 22, 1879; bred by Jardine & Sons, Hamilton, Ont., Canada; sire, Imp. Billy Muir, 754; dam, Highland Mary, 1875.

Bull 1 year old and under 2—6 entries·
First premium, T. E. Wight, Millbury, O........................ 20 00
Syndicate.
Second premium, John Stewart, Blackberry Station 10 00
Illinois; calved December 13, 1880; bred by John Stewart, Blackberry Station; sire, Grant, 2284; dam, Lady Jane, 2666.

Bull under 1 year old—5 entries:
First premium, Wm Fairweather, McLane, Pa. 15 00
Dunkeld; calved April 10, 1882; bred by Wm. Fairweather, McLane, Pa.; sire, Excelsior 1758; dam, Mollie Pender, 4351.
Second premium, Ormiston & Jardine, Cuba, N. Y 10 00
Chicago Chief, calved August 22, 1882; bred by Ormiston Bros., Cuba, N. Y.; sire, Mars 1st, 887; dam, Duchess of Vine Vale, 1797.

COWS.

Cow 4 years old or over—15 entries:
First premium, John Stewart, Blackberry Station 25 00
Spotty Grant 4900, calved May 30, 1878; bred by John Stewart, Blackberry Station; sire, Grant, 2284, dam, Ayrshire Ellen, 4890.
Second premium, John Stewart, Blackberry Station 15 00
Snowball, calved April 7, 1877, bred by John Stewart, Blackberry Station; sire, Grant, 2284; dam, Maggie, 2793.

Cow 3 years old and under 4—5 entries
First premium, John Stewart, Blackberry Station 25 00
Mary; calved October 26, 1878, bred by John Stewart, Blackberry Station; sire, Grant, 2284; dam, Topsy Kane, 4901.
Second premium, Ormiston & Jardine, Cuba, N. Y........................ 15 00
Lottie; calved April 15, 1879, bred by Ormiston Bros., Cuba, N.Y.; sire, Heather Jock; dam, Lady Kirkwood.

Heifer 2 years old and under 3—5 entries
First premium, John Stewart, Blackberry Station 25 00
Lizzie; calved November 15, 1879; bred by John Stewart, Blackberry Station; sire, Grant, 2281 dam, Snowball.
Second premium, Ormiston & Jardine, Cuba, N. Y 15 00
Princess Alice; calved October 13, 1879; bred by Jardine & Sons, Hamilton, Ont, Canada; sire, Mars 1st, 887; dam, Imp. Princess Louise, 2082.

Heifer 1 year old and under 2—8 entries.
First premium, Ormiston & Jardine, Cuba, N. Y........................ 20 00
Blooming Heather 2d; calved February 1, 1881; bred by Jardine & Sons, Hamilton, Ont., Canada; sire, Mars 1st, 887; dam, Imp. Blooming Heather, 1732.

Second premium, John Stewart, Blackberry Station. 10 00
Jenny; calved September 10, 1881; bred by John Steward, Blackberry Station; sire, Lincoln, 2285; dam, Lady Ellen, 2652.

Heifer under 1 year old—7 entries:
First premium, Ormiston & Jardine, Cuba, N. Y........................ 15 00
Jess; calved October 8, 1881; bred by Ormiston Bros., Cuba, N. Y.; sire, William Mars, 967; dam, Duchess of Vine Vale, 1797.
Second premium, Ormiston & Jardine, Cuba, N. Y 10 00
Lady Elroy; calved August 30, 1882; bred by Ormiston Bros., Cuba, N. Y.; sire, Mars 1st, 887; dam, Louise Mars, 2082.

Awarding Committee—John Shering, Florid; John W. Hunter, Owaneco; W. A. May, Pekin.

LOT 20—AYRSHIRES—THOROUGHBRED—HERD.

Herd—Bull 2 years old or over, cow 3 years old or over, heifer 2 years old and under 3, heifer 1 year old and under 2, heifer under 1 year old—4 entries :
Premium, Ormiston & Jardine, Cuba, N. Y........................ $50
Mars 1st, 887; May-Moon; Princess Alice; Blooming Heather 2d; Jess.

Awarding Committee—W. H. H. Holdridge, Tonica; J. A. Patrick, Wheaton: W. F. Whitson, Rushville.

Jersey Bull, Peoria Chief 4984, exhibited by D H. & S. S TRIPP, Peoria, Ill. Awarded Sweepstakes Premium, State Fair, 1882.—p. 17.

LOT 21—AYRESHIRES—THOROUGHBRED—SWEEPSTAKES.

Bull of any age—5 entries :
Premium, John Stewart, Blackberry Station $50 00
Lincoln 2285; calved November 19, 1879; bred by John Stewart, Blackberry Station; sire, Grant 2284; dam, Lady Jane 2666.

Cow or heifer of any age—12 entries .
Premium, Ormiston & Jardine, Cuba, N. Y 50 00
May-moon, Imp. 1873; calved 1871; sire, Sandy; dam, Coxy.

Awarding Committee—W. A. Pratt, Elgin; V. Barber, Decatur; O. J. Bailey, Peoria.

LOT 22—GRAND SWEEPSTAKES—HERD.

BEEF BREEDS.

Herd—Bull 2 years old or over, cow 3 years old or over, heifer 2 years old and under 3, heifer 1 year old and under 2, heifer under 1 year old—9 entries .
First premium, J. H. Potts & Son, Jacksonville 300 00
Master Richmond 33239; Emma 4th; Red Lady of Oakland; Louisa of Oakland; Fannie Airdrie 4th.
Second premium, J. H. Potts & Son, Jacksonville.. 125 00
Proud Duke 36660; Emma 5th; True Love of Oakland; Fannie Airdrie 3d, Fannie Airdrie 5th.
Third premium, Earl & Stuart, Lafayette, Ind. 75 00
Royal 16th, Lady 3d; Venus; Pretty Maid; Erda.

Awarding Committee—Joel W. Hopkins, Peru, B. F. Funk, Bloomington; T. M. Thornbury, Bloomington.

LOT 23—GRAND SWEEESTAKES—HERD.

MILK BREEDS.

Herd—Bull 2 years old or over, cow 3 years old or over, heifer 2 years old and under 3, heifer 1 year old and under 2, heifer under 1 year old—11 entries ·
First premium, D. H. & S. S Tripp, Peoria $300 00
Peoria Chief 4984; Pomare 6003; Marea 10167; Annie's Orphan [illegible]067; Nadenette 15519.
Second premium, John Stewart, Blackberry Station.. 125 00
Lincoln 2285, Spotty Grant, Lizzie; Jenny; Snowball 4th.
Third premium, Unadilla Valley Stock Breeders' Asso'n, West Edmeston, N. Y. 75 00
Movie 26; Jacoba Hartog 1; Jacoba Hartog 4th 169; Kleiterp 4th 49, Unadilla Twisk Calf 51.

Awarding Committee—W A. May, Pekin; John M Pearson, Godfrey; V. Barber, Decatur; Jas. Freeman, Bloomington; Geo N. Dunlap, Bloomington.

LOT 24—FAT STEERS OR SPAYED HEIFER.

Steer or spayed heifer 3 and under 4 years old—1 entry :
First premium, J. H. Potts & Son, Jacksonville. $25 00

Steer or spayed heifer 2 and under 3 years old—1 entry :
First premium, J. H. Potts & Son, Jacksonville.. 25 00

Steer or spayed heifer 1 and under 2 years old—1 entry :
First premium, J. H. Potts & Son, Jacksonville.. 25 00

Awarding Committee—O. A. Bridgeford, Joy; P. S. Judy, Quincy; S. S. Coffin, Ft. Dodge, Iowa; Wash. Corbin, Quincy.

CLASS B—HORSES.

D. E. BEATY, *Superintendent*.

LOT 25—THOROUGHBRED.

Stallion 4 years old or over—5 entries ;
First premium, W. J. Neely, Ottawa.. $25 00
Imp. Intruder; foaled 1871; bred by Sir L. Newman; imported by D. D. Wilters, N. Y.; sire, Carter; dam, Lady Bountiful, by Rataplan.
Second premium, Wiley Buckles, Champaign.. 15 00
Harkaway; foaled 1875; bred by A. Buford, Midway, Ky.; sire, Enquirer; dam, Russia, by Ruric.

Stallion 3 years old and under 4—1 entry:
First premium, Thomas Young, Springfield $20 00
Viron; foaled March 16, 1879; sire, Voltigeur; dam, Lama, by Red Horse, son of Pacific.

Stallion 2 years old and under 3—1 entry:
First premium D. M. Crone, Wyoming 20 00
Young Marksman.

Stallion 1 year old and under 2—2 entries:
First premium, Wiley Buckles, Champaign 15 00
Hannibal; foaled 1881; bred by Wiley Buckles, Champaign; sire, Harkaway; dam, Lizzie Vic.
Second premium, Wiley Buckles, Champaign 10 00
Harpoon; foaled 1881; bred by Wiley Buckles, Champaign; sire, Harkaway; dam, Suelight.

Stallion colt under 1 year old—1 entry:
First premium, Wiley Buckles, Champaign 15 00
Henry H; foaled 1882; bred by Wiley Buckles, Champaign; sire, Harkaway; dam, Lizzie Vic.

MARES.

Mare 4 years old or over—2 entries:
First premium, Wiley Buckles, Champaign $25 00
Lizzie Vic; foaled 1868; bred by W. R. A. Lewis, Scott Co., Ky.; sire, Uncle Vic; dam, Maga.
Second premium, Wiley Buckles, Champaign .... 15 [illegible]
Bay Bee; foaled 1878; bred by Wiley Buckles, Champaign; sire, Imp. Billet; dam, Lizzie Vic.

Mare 3 years old and under 4—1 entry:
First premium, J. A. McClernand, Springfield 20 00
Ida Wood; foaled May 29, 1879; bred by John A. McClernand, Springfield; sire, Barney Williams; dam, Bronze by Marion.

Mare 2 years old and under 3—1 entry:
First premium, S. H. Jones, Springfield 20 00
Mollie Moore; foaled April 19 1880; bred by S. H. Jones, Springfield; sire, Barney Williams; dam, Glance by Marion.

BREEDING RINGS.

Brood Mare, shown with 2 of her colts, under 2 years of age—1 entry:
Premium, Wiley Buckles, Champaign 30 00
Lizzie Vic.

Awarding Committee—R. Seaton, Camp Point; J. C. McFerran, Louisville, Ky.; W. H. Wilson, Cynthiana, Ky.

LOT 26—THOROUGHBRED SWEEPSTAKES.

Stallion of any age—7 entries:
Premium, W. J. Neely, Ottawa $100 00
Imp. Intruder.

Mare of any age—4 entries:
Premium, Wiley Buckles, Champaign 50 00
Bay Bee.

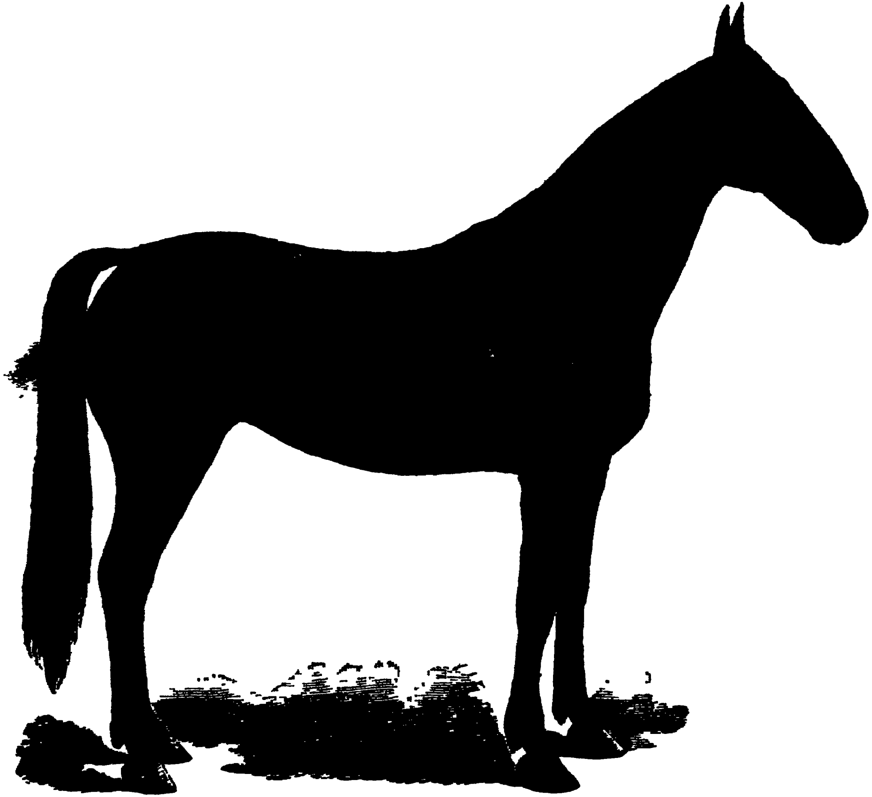
Awarding Committee—M. Higby, Canton; J. L. Connelly, Harristown.

LOT 27—ROADSTERS.

STALLIONS.

Stallion 4 years old or over, to harness—22 entries:
First premium W. H. Wilson, Cynthiana, Ky $25 00
Blackwood, Jr.; foaled 1871; bred by B. F. and A. Van Meter, Winchester, Ky.; sire, Blackwood; dam, Belle Sheridan by Blood's Black Hawk.
Second premium, Wash Corbin, Quincy 15 00
Corbin's Bashaw; foaled May 10, 1876; bred by Mark Corbin, Quincy; sire, Amboy; dam, Black Maria by Banner Chief.

Stallion 3 years old and under 4, to harness—7 entries:
First premium, W. H. Wilson, Cynthiana Ky 20 00
Spotswood; foaled 1879; bred by Jacob Zell, Nashville, Tenn.; sire, Blackwood, Jr.; dam, Norma by Norman.
Second premium, Daciana Stock Farm, Bloomington 10 00
Landseer; sire, Mambrino Patchen; dam, by Black Bat, by Iron Duke.



Roadster Mare, Lady DeJarnett, exhibited by W. H. Wilson, Cynthiana, Ky.
Awarded Sweepstakes Premium, State Fair, 1882.—p. 19.

Stallion 2 years old and under 3—22 entries:
First premium, M. Higby, Canton.. $20 00
Henry Temple; foaled June, 1880; bred by Jas. P. McQuaid, Canton; sire, Dan Mace by Gov. Sprague; dam, Fan, by Sir Henry.
Second premium, Stribling and Conover, Virginia.. 10 00
Prospect King; foaled May 27, 1880; bred by L. Herr, Lexington, Ky.; sire, Mambrino King; dam, Maggie Marshall.

Stallion 1 year old and under 2—17 entries:
First premium, Andrew Armstrong, Beason.. 15 00
Billy Springer; foaled June 8, 1881; bred by Jacob Myer, Mt. Pulaski; sire, Abdallah Jr.; dam, Morgan Mare.
Second premium, Geo. Weedman, Farmer City.. 10 00
Wm. B. Sprague; foaled June 1, 1881; bred by John Weedman, Farmer City; sire, George Sprague; dam, Golddust Mare.

Stallion Colt under 1 year old—16 entries:
First premium, Melbourne Stock Farm, Washington.. 15 00
————; sired by Fairy Gift; dam by Gage's Logan.
Second premium, Andrew Armstrong, Beason.. 10 00
Davie; foaled May 29, 1882; bred by Jacob Myers, Mt. Pulaski; sire, Abdallah, Jr.; dam, Morgan Mare.

MARES.

Mare 4 years old or over, to harness—24 entries:
First premium, W. H. Wilson, Cynthiana, Ky.. 25 00
Lady De Jarnett; foaled 1874; bred by Martin Jones, Sharpsburg, Ky.; sire, Indian Chief; dam, by Lewis' Garfield.
Second premium, Higby and Babcock, Canton.. 15 00
Jannette; foaled 1873; bred by Hugh Williams, Racine, Wis.; sire, Swigert; dam, Merrimac by Bellfounder.

Mare 3 years old and under 4, to harness—9 entries:
First premium, Melbourne Stock Farm, Washington.. 20 00
Iola; sired by Mambrino Patchen; dam, by Briggart's Rattler.
Second premium, Stribling and Conover, Virginia.. 10 00
May Lippincott; foaled May 1, 1879; bred by Chas. Lippincott, Chandlerville, sire, Rock Island Bashaw by Green's Bashaw.

Mare 2 years old and under 3—9 entries:
First premium, J. C. McFerran & Son, Louisville, Ky.. 20 00
Second premium, J. C. McFerran & Son, Louisville, Ky.. 10 00

Mare 1 year old and under 2—7 entries:
First premium, J. C. McFerran & Son, Louisville, Ky.. 15 00
Second premium, J. C. McFerran & Son, Louisville, Ky.. 10 00

Mare colt under 1 year old—8 entries:
First premium, Andrew Armstrong, Beason.. 15 00
Fannie; foaled February 28, 1882; bred by Andrew Armstrong, Beason; sire, Abdallah, Jr.; dam, Snip.
Second premium, T. H. Ferris, Galesburg.. 10 00
Alta; foaled April, 1882; bred by T. H. Ferris, Galesburg; sire, Almore, by Almont; dam, Irish Maid.

BREEDING RINGS.

Brood Mare shown with 2 of her colts under 2 years of age—4 entries:
Premium, Andrew Armstrong, Beason.. 30 00
Nellie Brown.

Stallion, showing best five sucking foals of either sex—1 entry:
Premium, Andrew Armstrong, Beason.. 50 00
Abdallah, Jr.; foaled 1864; bred by T. K. Hurst, Versailles, Ky.; sire, Alexander's Abdallah; dam, by Columbus (Barclay's).

Awarding Committee.—M. W. Green, Jacksonville; George Pickrell, Wheatfield; J. M. Weir, Virginia; J. N. Beaty, Jerseyville; M. Graves, Virginia.

LOT 28—ROADSTERS—SWEEPSTAKES.

Stallion of any age—26 entries:
Premium, W. H. Wilson, Cynthiana, Ky.. 100 00
Blackwood, Jr.

Mare of any age—27 entries:
Premium, W. H. Wilson, Cynthiana, Ky.. 50 00
Lady De Jarnett.

Awarding Committee.—Henry T. Noble, Dixon; W. W. Bushnell, Osceola; M. Graves, Virginia; J. H. Height, Pekin; T. Hunter, Owaneco.

LOT 29—FRENCH DRAFT HORSES.

Norman, Percheron and other French Draft breeds—Imported or Full Blood.

STALLIONS.

Stallion, 4 years old or over—10 entries:
First premium John Virgin, Fairbury $25 00
Sultan; foaled 1876; imported 1881.
Second premium, Cress Bros., Washington 15 00
Royal Prince; foaled, May, 1878; bred by Mr. Vidal, Paris, France.

Stallion, 3 years old and under 4—5 entries:
First Premium, John Virgin, Fairbury 20 00
Jow Jow; foaled, 1879; imported, 1882.
Second premium, Ed. Hodgson El Paso 10 00
Tonnilier; foaled 1879; bred at Rouen, France; imported July 29, 1882.

Stallion, 2 years old and under 3—3 entries:
First premium, John Virgin, Fairbury 20 00
Remarquable; foaled 1880; imported 1882.

Second premium, Ed. Hodgson, El Paso 10 00
Tachean; foaled 1880; bred at Laferte, France; imported July 29, 1882.

Stallion, 1 year old and under 2—3 entries:
First premium, Duncan & Barnes, Bloomington. 15 00
Count de Shampeaux; foaled April, 1881; bred by Mr. Perio, Nogeant, France; imported July 3, 1882.
Second premium, Ed. Hodgson, El Paso 10 00
Helfres; foaled 1881; bred at Laferte, France; imported July 29, 1882.

Stallion colt under 1 year old—1 entry:
First premium, John Virgin, Fairbury 15 00
Utah; foaled 1882; imported 1882.

MARES.

Mare, 4 years old or over—3 entries:
First premium, John Virgin, Fairbury 25 00
Wakeful; foaled 1877; imported 1882.
Second premium, Duncan & Barnes, Bloomington 15 00
Laurane; foaled April 1876; imported by owners, August 1, 1881.

Mare, 3 years old and under 4—2 entries:
First premium, Ed. Hodgson, El Paso 20 00
Mignonette; foaled 1879; bred at Laferte, France; imported July 29, 1882.
Second premium, John Virgin, Fairbury 10 00
Rainy Day; foaled 1879; imported 1882.

Mare 2 years old and under 3—1 entry:
First premium, Duncan & Barnes, Bloomington 20 00
Madame Laconte; foaled January, 1880; imported by owners, July 3, 1882.

Mare, 1 year old and under 2—3 entries:
First premium, Ed. Hodgson, El Paso 15 00
Celeste; foaled 1881; bred at Laferte, France; imported July 29, 1882.
Second premium, Duncan & Barnes, Bloomington 10 00
Madame Gilbert; foaled March, 1881; imported by owners, July 3, 1882.

Mare, colt under 1 year old—1 entry:
First premium, Duncan & Barnes, Bloomington 15 00
Wee Madame; foaled March 1882; bred by Mr. Perio, Nogeant, France; imported in dam Laurane, by owners,

Awarding Committee.—J. B. Nichols, Cambridge; W. O. Wilson, Paris; Thos. Curtis, Albion.

BREEDING RINGS.

Brood mare, shown with 2 of her colts under 2 years of age—1 entry:
Premium, Duncan & Barnes, Bloomington $30 00
Laurane.

Awarding Committee.—E. G. Valle, Rochelle; W. O, Wilson, Paris; Thornton Hunter, Owaneco.

Norman Percheron Stallion, Jow Jow, exhibited by JOHN VIRGIN, Fairbury, Ill. Awarded Sweepstakes Premium, State Fair, 1882.—p. 21.

LOT 30—FRENCH DRAFT HORSES—SWEEPSTAKES.

Stallion, of any age—12 entries:
Premium, John Virgin, Fairbury $100 00
Jow Jow.

Mare, of any age—7 entries:
Premium, Duncan & Barnes, Bloomington 50 00
Laurane.

Awarding committee.—T. M. Thornbury, Bloomington; J. Tabor Mathers, Jacksonville; E. M. Adams, Chandlerville.

LOT 31—ENGLISH DRAFT HORSES.

Clydesdale and other English Draft breeds—Imported or Full Blood.

STALLIONS.

Stallion, 4 years old or over—17 entries:
First premium, R. Holloway, Alexis $25 00
Second premium, Murray Bros., Polo 15 00
Earl of Buchan 1126; foaled May, 1876; bred by Alexander Bruce, Whitelaw, Aberdeenshire; sire, Sir Lord Derby 485; dam, Jeane 34.

Stallion 3 years old and under 4—14 entries:
First premium, Geo. W. Ayers, Gridley 20 00
Sir Roberts; foaled May 12, 1879; bred by M. Henry Bell, Standish, Eng.; sire, Noah, 1634; dam, by Master of Arts, 1499.
Second premium, Wm Moffatt & Bro., Paw Paw 10 00
Earl of Eglington, 748 (1644).

Stallion 2 years old and under 3—13 entries:
First premium, Murray Bros., Polo 20 00
Think On Me; foaled 1880; bred by Miss Doig, New Luce, Wignonshire, Scotland; sire, Lord Lyon, 485; dam Maggie of Barlure, 732.
Second premium, J. H. Truman Chicago 10 00
Harlequin; foaled April, 1880; bred by James Staples, Soham, Cambridgeshire, Eng.; sire (Taylor's), Thumper; dam, Short by Thumper (9135).

Stallion 1 year old and under 2—7 entries:
First premium, Wm Moffatt & Bro., Paw Paw 15 00
Young Topsman, 726, bred by Wm. Moffatt & Bro., Paw Paw.
Second premium, Cress Bros., Washington 10 00
Clyde; foaled June, 1881; bred by Thos. Brown, Pentland Mains, Loanhead, Scotland; sire, Prince of Orange (1270); dam, Molly by Prince of Kilbernie.

Stallion colt under 1 year old—2 entries:
First premium, Wm. Moffatt & Bro., Paw Paw 15 00
Johnnie Ladd, Jr.; bred by Wm. Moffatt & Bro., Paw Paw; sire, Johnnie Lad, 252 (1455); dam, Darling XI, 256.
Second premium, Wm. Moffatt & Bro., Paw Paw 10 00
Johnnie Lad 2d; bred by Wm. Moffatt & Bro., Paw Paw; sire, Johnnie Lad, 252 (1455); dam, Darling VI, 247.

MARES.

Mare 4 years old or over—12 entries:
First premium, Wm. Moffatt & Bro., Paw Paw 25 00
Bonny, 725; foaled April, 1877; bred by Joseph Moffatt; sire, Dundonald, 384.
Second premium, W. B. Holmes, Melvin 15 00
Pilot, Imp.; foaled September 10, 1878; bred by T. Barugh, Acton, York, Eng.; sire, Coralton Tom; dam, by Sir William Wallace.

Mare 3 years old and under 4—8 entries:
First premium, John Foulk, Mendota 20 00
Second premium, Wm. Moffatt & Bro., Paw Paw 10 00
Darling XII, 259.

Mare 2 years old and under 3—6 entries:
First premium, R. Holloway, Alexis 20 00
Second premium, Wm. Moffatt & Bro., Paw Paw 10 00
Darling XV; bred by Wm. Moffatt & Bro., Paw Paw; sire, Topsman, 249 (1333).

Mare 1 year old and under 2—4 entries:
First premium, Wm. Moffatt & Bro., Paw Paw 15 00
Topsy, 724; bred by Wm. Moffatt & Bro., Paw Paw; sire, Topsman, 249 (1333).
Second premium, R. Holloway, Alexis 10 00

Mare colt under 1 year old—4 entries:	
First premium, Burgess Bros., Wenona	$15 00
Second premium, Wm. Moffatt & Bro., Paw Paw	10 00
—— ; bred by Wm. Moffatt & Bro., Paw Paw; sire, Johnnie Lad, 252 (1455); dam, Peggy W., 403.	

BREEDING RINGS.

Brood Mare, shown with 2 of her colts under 2 years of age—1 entry:	
Premium, Wm. Moffatt & Bro., Paw Paw	30 00
Darling VI, 243; bred by Jas. I. Davidson; sire, Netherby, 8 (1862).	

Awarding Committee—E. G. Vaile, Rochelle; W. O. Wilson, Paris; T. Hunter, Owaneco; J. P. Blodgett, Downer's Grove; Felix Agniel, Grayville.

LOT 32—ENGLISH DRAFT HORSES—SWEEPSTAKES.

Stallion of any age—32 entries:	
Premium, R. Holloway, Alexis	$100 00
Mare of any age—15 entries:	
Premium, R. Holloway, Alexis	50 00

Awarding Committee—J. Tabor Mathers, Jacksonville; T. K. Gore, Carlinville; J. W. Ramsey, Jacksonville; B. F. Funk, Bloomington.

LOT 33—HORSES FOR AGRICULTURAL PURPOSES.

STALLIONS.

Stallion 4 years old or over—20 entries:	
First premium, Burgess & Bros., Wenona	$25 00
Second premium, H. Huggins, Gilson	15 00
Stallion 3 years old and under 4—2 entries:	
First premium, H. Huggins, Gilson	20 00
Second premium, Burgess Bros., Wenona	10 00
Stallion 2 years old and under 3—8 entries:	
First premium, Sam. A. Burnside, Princeton	20 00
Second premium, Cress Bros., Washington	10 00
Stallion 1 year old and under 2—1 entry:	
First premium, David Fisher, Goderich, Can	15 00
Stallion Colt under 1 year old—4 entries:	
First premium, Cress Bros., Washington	15 00
Second premium, J. J. Paul, Boynton	10 00

MARES.

Mare 4 years old or over—5 entries:	
First premium, Geo. Weedman, Farmer City	25 00
Second premium, Railsback & Pittsford, Hopedale	15 00
Mare 3 years old and under 4—3 entries:	
First premium, Railsback & Pittsford, Hopedale	20 00
Second premium, J. J. Paul, Boynton	10 00
Mare 2 years old and under 3—3 entries:	
First premium, Eugene Churchill, Canton	20 00
Second premium, Wm. Moffatt & Bro., Paw Paw	10 00
Mare 1 year old and under 2—3 entries:	
First premium, Eugene Churchill, Canton	15 00
Second premium, Wm. Peterson, Stark	10 00
Mare Colt under 1 year old—7 entries:	
First premium, Eugene Churchill, Canton	15 00
Second premium, Andrew Armstrong, Beason	10 00

BREEDING RINGS.

Brood mare, shown with two of her colts under 2 years of age—3 entries:	
Premium, J. J. Paul, Boynton	$30 00
Stallion, showing best 5 sucking foals of either sex—2 entries:	
Premium, T. L. Wybray, Tremont	50 00

Awarding Committee—J. H. Potts, Jacksonville; A. E. Horn, Fowler; W. M. Chiles, Carlinville.

LOT 34—HORSES FOR AGRICULTURAL PURPOSES. SWEEPSTAKES.

Stallion of any age—28 entries:	
Premium, H. Huggins, Gilson	$100 00
Mare of any age—14 entries:	
Premium, Eugene Churchill, Canton	50 00

Awarding Committee—W. S. Vance, Virginia; I. Strawn, Jacksonville; John E. Stubblefield, McLean.

LOT 35—SADDLE HORSES.

STALLIONS

Saddle stallion, 4 years old or over—2 entries:	
First premium, J. F. Spencer, Pine Grove, Ky	$20 00
Second premium, E. A. Trimmer, Towanda	10 00
Saddle stallion, 2 years old and under 3—1 entry:	
First premium, M. H. Dunlap, Bloomington	20 00

MARES.

Saddle mare, 4 years old or over—2 entries:	
First premium, Crawley & Schenck, Peoria	20 00
Second premium, J. F. Spencer, Pine Grove, Ky	10 00
Saddle mare, 3 years old and under 4—1 entry:	
First premium, Conover & Crum, Little Indian	20 00
Saddle mare, 2 years old and under 3—1 entry:	
First premium, George Weedman, Farmer City	20 00

GELDINGS.

Saddle gelding, 4 years old or over—6 entries:	
First premium, J. F. Spencer, Pine Grove, Ky	20 00
Second premium, J. H. Trout, Tremont	10 00
Saddle gelding, 3 years old and under 4—2 entries:	
First premium, M. H. Dunlap, Bloomington	20 00
Second premium, Andrew Armstrong, Beason	10 00

LOT 36—CARRIAGE HORSES.

Carriage team, to carriage—15 entries:	
First premium, J. C. McFerran & Son, Louisville, Ky	$40 00
Second premium, Conover & Crum, Little Indian	20 00
Family mare or gelding, to buggy—28 entries:	
First premium, W. H Wilson, Cynthiana, Ky	20 00
Second premium, M. Higby, Canton	10 00

Awarding Committee—J. Stevens, Virginia; D. Bates, Pittsfield; E. L. Cronkrite, Freeport.

LOT 37—GENTLEMENS' DRIVING HORSES.

Pair of mares, to pole—7 entries:	
First premium, W. H. Wilson, Cynthiana, Ky	$40 00
Second premium, Stribling & Conover, Virginia	20 00
Pair of geldings, to pole—9 entries:	
First premium, Caton Stock Farm, Joliet	40 00
Second premium, J. H. Trout, Tremont	20 00
Single stallion, to harness—21 entries:	
First premium, Conover & Crum, Virginia	40 00
Second premium, Daciana Stock Farm, Bloomington	20 00
Single mare, to harness—24 entries:	
First premium, W. D. Ham, Hennepin	30 00
Second premium, Stribling & Conover, Virginia	15 00

Single gelding, to harness—21 entries:

First premium, Crawley & Schenck, Peoria	$30 00
Second premium, J. W. Crabb, Green Valley	15 00

Awarding Committee—M. Graves, Virginia; J. H. Hight, Pekin; Thornton Hunter, Owaneco.

LOT 38—JACKS, JENNETS AND MULES.

JACKS.

Jack, 4 years old or over—2 entries:

First premium, Augenstein & Cooper, Cooper	$25 00
Second premium, W. J. Phelps, Elmwood	15 00

Jack, 1 year old and under 2—1 entry:

First premium, A. Y. Bartholomew, Elmwood	15 00

Jack colt, under 1 year old—1 entry:

First premium, W. J. Phelps, Elmwood	10 00

JENNETS.

Jennet, 3 years old or over—2 entries.

First premium, A. Y. Bartholomew, Elmwood	25 00
Second premium, W. J. Phelps, Elmwood	15 00

Jennet, 1 year old and under 2—1 entry:

First premium, A. Y. Bartholomew, Elmwood	15 00

MULES.

Mule, 3 years old or over—2 entries:

First premium, B. K. Cress, Washington	15 00
Second premium, B. K. Cress, Washington	10 00

Mule, 1 year old and under 2—1 entry:

First premium, J. T. Craig, Yates City	15 00

Mule colt, under 1 year old—4 entries:

First premium, J. T. Craig, Yates City	10 00
Second premium, Augenstein & Cooper, Cooper	5 00

Awarding Committee—P. S. Judy, Camp Point; O. A. Bridgeford, Joy; W. R. Crain, Mounds Junction.

LOT 39—JACKS, JENNETS AND MULES—SWEEPSTAKES.

Jack of any age, shown with not less than three of his get—1 entry:

Premium, Augenstein & Cooper, Cooper	$50 00

Jennet of any age, shown with two of her colts—1 entry:

Premium, W. J. Phelps, Elmwood	25 00

Team of mules, 3 years old or over, to farm wagon—1 entry:

Premium, B. K. Cress, Washington	25 00

Awarding Committee—G. V. Lough, Baileyville; Aaron Scheeler, Chillicothe; J. D. McVicker, Henry.

LOT 40—EQUESTRIANISM.

BOYS' RIDING.

Boy not over 14 years old, displaying best horsemanship in the saddle—8 entries:

First premium, Asa Danforth, Washington	$10 00
Second premium, E. A. Armstrong, Beason	5 00
Third premium, Frank Harwood, Bloomington	3 00
Fourth premium, Craig McQuaid, Canton	2 00
Fifth premium, H. W. Armstrong, Beason	1 00

Awarding Committee—J. H. Sanders, Chicago; Fred. Wilkinson, Petersburg; L. W. James, Peoria.

CLASS C—SHEEP.

E. B. DAVID, *Superintendent.*

PURE BRED LONG WOOLS.

LOT 41—COTSWOLDS.

RAMS.

Rams, 2 years old or over—9 entries:
First premium, J. A. Brown & Son, Decatur $20 00
Captor; dropped 1879; bred by Joseph Yeomans, England.
Second premium, Abner Strawn, Ottawa 10 00

Ram, 1 year old and under 2—17 entries:
First premium, H. Sorby, Guelph, Canada 15 00
——; dropped March 6, 1881; bred by H. Sorby, Guelph, Ca.; sire, Duke of Carlyle, 1328; dam, Imp. ewe.
Second premium, H. Sorby, Guelph, Canada 10 00
——; dropped March 20, 1881; bred by H. Sorby, Guelph, Ca.; sire, Marquis, 1333; dam, Imp ewe.

Ram lamb, under 1 year old—11 entries
First premium, Abner Strawn, Ottawa 10 00
Second premium, Abner Strawn, Ottawa.......... 5 00

EWES.

Ewe, 2 years old or over—18 entries:
First premium, J. A. Brown & Son, Decatur.......... $20 00
Daisy; dropped 1879: bred by Joseph Yeoman's, England.
Second premium, Abner Strawn, Ottawa 10 00

Ewe, 1 year old and under 2—14 entries:
First premium, H. Sorby, Guelph, Canada.......... 15 00
——; dropped March 21, 1881; bred by H. Sorby, Guelph, Ca.; sire, Marquis 1333; dam, Imp. Ewe.
Second premium, Abner Strawn, Ottawa 10 00

Ewe lamb, under 1 year old—11 entries:
First premium, Abner Strawn, Ottawa 10 00
Second premium, J. A. Brown & Son, Decatur 5 00
Daisy 2d; dropped 1881; bred by J. A. Brown & Son, Decatur; sire, Captor; dam, Daisy.

Awarding Committee—J. L. S. Devault. La Rose; R. F. Beals, Woodhull; E. E Bush, Elmwood.

LOT 42—COTSWOLDS—SWEEPSTAKES.

Ram of any age—14 entries:
Premium, H. Sorby, Guelph, Canada $20 00
Imp. Ram; dropped 1882; bred by E. Tombs, Brampton, Eng.

Ewe of any age—16 entries:
Premium. J. A. Brown & Son, Decatur 15 00
Daisy.

Ram and 5 ewes over 2 years old—4 entries:
Premium, Morgan & Ponting, Stonington 20 00

Ram, with 5 of his get, under 2 years old, of either sex, bred and owned by exhibiter—5 entries:
Premium, Abner Strawn, Ottawa 20 00

Awarding Committee—O. B. Nichols, Carlyle; J. D. Housh, Gilson; Andrew Oliver' Elmira.

LOT 43—LEICESTER OR LINCOLN.

Ram, 2 years old or over—5 entries:	
First premium, D. C. Graham, Cameron	$20 00
Second premium, Geary Bros., London, Canada	10 00
Ram, 1 year old and under 2—4 entries:	
First premium, D. C. Graham, Cameron	15 00
Second premium, D. C. Graham, Cameron	10 00
Ram lamb, under 1 year old—3 entries:	
First premium, D. C. Graham, Cameron	10 00
Second premium, D. C. Graham, Cameron	5 00

EWES.

Ewe, 2 years old or over—5 entries:	
First premium, D. C. Graham, Cameron	$20 00
Second premium, Geary Bros., London, Canada	10 00
Ewe, 1 year old and under 2—6 entries:	
First premium, Geary Bros., London, Canada	15 00
Second premium, D. C. Graham, Cameron	10 00
Ewe lamb, under 1 year old—4 entries:	
First premium, D. C. Graham, Cameron	10 00
Second premium, D. C. Graham, Cameron	5 00

Awarding Committee—David Calhoun, Keithsburg; W. K. Dunlap, Dunlap; John Turnbull, Elmira.

LOT 44—LEICESTER OR LINCOLN—SWEEPSTAKES.

Ram of any age—3 entries:	
Premium, D. C. Graham, Cameron	$20 00
Ewe of any age—3 entries:	
Premium, D. C. Graham, Cameron	15 00
Ram and 5 ewes, over 2 years old—4 entries:	
Premium, D. C. Graham, Cameron	20 00
Ram, with 5 of his get, under 2 years old, of either sex, bred and owned by exhibiter—2 entries:	
Premium, D. C. Graham, Cameron	50 00

Awarding Committee—O. B. Nichols, Carlyle; J. D. Housh, Gilson; Andrew Oliver, Elmira.

PURE-BRED MIDDLE-WOOLS.

LOT 45—SOUTHDOWNS.

RAMS.

Ram, 2 years old or over—5 entries:	
First premium, J. H. Potts & Son, Jacksonville	$20 00
Second premium, J. H. Potts & Son, Jacksonville	10 00
Ram, 1 year old and under 2—5 entries:	
First premium, Leslie Combs, Spring Station, Ky.	15 00
Second premium, Leslie Combs, Spring Station, Ky.	10 00
Ram lamb, under 1 year old—2 entries:	
First premium, H. Sorby, Guelph, Canada	10 00
Second premium, H. Sorby, Guelph, Canada	5 00

EWES.

Ewe, 2 years old or over—5 entries:	
First premium, J. H. Potts & Son, Jacksonville	$20 00
Second premium, J. H. Potts & Son, Jacksonville	10 00

Ewe, 1 year old and under 2—5 entries:	
First premium, J. H. Potts & Son, Jacksonville	$15 00
Second premium, Leslie Combs, Spring Station, Ky.	10 00
Ewe lamb, under 1 year old—4 entries:	
First premium, Dariana Stock Farm, Bloomington	10 00
Second premium, J. H. Potts & Son, Jacksonville	5 00

Awarding Committee—W. E. Barrett, Newton; J. L. S. DeVault, LaRose: J. R. Megginson, Jacksonville.

LOT 46—SOUTHDOWNS—SWEEPSTAKES.

Ram of any age—6 entries:	
Premium, Leslie Combs, Spring Station, Ky	$20 00
Ewe of any age—7 entries.	
Premium, J. H. Potts & Son, Jacksonville	15 00
Ram and 5 ewes, over 2 years old—1 entry:	
Premium, J. H. Potts & Son, Jacksonville	20 00
Ram, with 5 of his get, under 2 years old, of either sex, bred and owned by exhibiter —1 entry:	
Premium, J. H. Potts & Son, Jacksonville	20 00

Awarding Committee—D. Calhoun, Keithsburg; Nelson Jones, Towanda; S. P. Mitchell, Oneida.

LOT 47—SHROPSHIREDOWNS, HAMPSHIREDOWNS, AND OTHER PURE-BRED MIDDLE-WOOLS.

RAMS.

Ram, 2 years old or over—4 entries:	
First premium, G. Allen & Sons, Palermo	$20 00
Second premium, G. Allen & Sons, Palermo	10 00
Ram, 1 year old and under 2—9 entries:	
First premium, G. Allen & Sons, Palermo	15 00
Second premium, Stone & Loake, Stonington	10 00
Ram lamb, under 1 year old—11 entries:	
First premium, Henry Phillips, Jackson, Mich	10 00
Second premium, Henry Phillips, Jackson, Mich	5 00

EWES.

Ewe, 2 years old or over—9 entries:	
First premium, G. Allen & Sons, Palermo	$20 00
Second premium, J. A. Brown & Sons, Decatur	10 00
Ewe, 1 year old and under 2—13 entries:	
First premium, G. Allen & Sons, Palermo	15 00
Second premium, Stone & Loake, Stonington	10 00
Ewe lamb, under 1 year old—10 entries:	
First premium, Henry Phillips, Jackson, Mich	10 00
Second premium, Chaffer & Leonard, Tremont	5 00

Awarding Committee.—A. Jeffer, LaSalle; Thos. Taylor, Waynesville; J. L. S. DeVault, La Rose.

LOT 48—SHROPSHIREDOWNS, ETC.—SWEEPSTAKES.

Ram of any age—12 entries:	
Premium, G. Allen & Sons, Palermo	$20 00
Ewe of any age—17 entries:	
Premium, G. Allen & Sons, Palermo	15 00
Ram and 5 ewes over 2 years old—2 entries:	
Premium, G. Allen & Sons, Palermo	20 00
Ram with 5 of his get, under 2 years old, of either sex, bred and owned by the exhibiter—2 entries:	
Premium, G. Allen & Sons, Palermo	20 00

Awarding Committee.—W. E. Barrett, Newton; J. L. S. DeVault, La Rose; J. R. Megginson, Jacksonville.

PURE-BRED FINE WOOLS.

LOT 49—AMERICAN MERINOS.

RAMS.

Ram 2 years old or over—14 entries:
First premium, G. W. McFadden, Atlanta........................ $20 00
Smuggler, 182; dropped April, 1878; bred by Robt. Perrine, Patterson Mills, Pa.; sire, Comet, 35; dam, Ewe No. 195.
Second premium, E. Peck & Sons, Geneva........................ 10 00
Rich, 402; dropped 1878; bred by J. T. & V. Rich, Richville, Vt.; sire, 331; dam, 17.

Ram 1 year old and under 2—17 entries:
First premium, E. Peck & Sons, Geneva........................ 15 00
Rich, Jr., 405; dropped 1881; bred by E. Peck & Sons, Geneva; sire, Rich, 402; dam, Towne ewe, 19.
Second premium, G. W. McFadden, Atlanta........................ 10 00
Maximum, 103; dropped April, 1881; bred by G. W. McFadden, Atlanta; sire, Controller; dam, Ewe No. 209.

Ram lamb under 1 year old—11 entries:
First premium, G. W. McFadden, Atlanta........................ 10 00
Great Eastern; dropped March, 1882; bred by G. W. McFadden, Atlanta; sire, Leo, 189; dam, Perrine ewe.
Second premium, E. Peck & Sons, Geneva........................ 5 00
No. 419; dropped 1882; bred by E. Peck & Sons, Geneva; sire, Rich, 402; dam, Towne ewe, 6.

EWES.

Ewe 2 years old or over—18 entries:
First premium, E. Peck & Sons, Geneva........................ 20 00
No. 101; dropped 1875; bred by E. Peck & Sons, Geneva; recorded.
Second premium, G. W. McFadden, Atlanta........................ 10 00
Queen, 62; dropped April, 1880; bred by G. W. McFadden, Atlanta; sire, Comet, 35; dam, Allison ewe.

Ewe 1 year old and under 2—13 entries
First premium, Taylor Bros., Waynesville........................ 15 00
......, dropped April, 1881; bred by Taylor Bros., Waynesville; sire, Smuggler, Jr., 35; dam, Queen, 97
Second premium, G. W. McFadden, Atlanta........................ 10 00
No. 648; dropped April, 1881; bred by G. W. McFadden, Atlanta, sire, Model; dam, Ewe No. 222.

Ewe lamb under 1 year old—18 entries:
First premium, G. W. McFadden, Atlanta........................ 10 00
M. S. L.; dropped April, 1882; bred by G. W. McFadden, Atlanta; sire, Comet, 35; dam, Allison ewe.
Second premium, Taylor Bros., Waynesville........................ 5 00
......; dropped April, 1882; bred by Taylor Bros., Waynesville; sire, Bissell, 136; dam, Miss Paul, 109.

Awarding Committee.—David Calhoun, Keithsburg; Edwin Waite, Sycamore; O. B. Nichols, Carlyle.

LOT 50—AMERICAN MERINOS—SWEEPSTAKES.

Ram of any age—14 entries.
Premium, E. Peck & Sons, Geneva........................ $20 00
Rich, Jr., 405.

Ewe of any age—16 entries.
Premium, G. W. McFadden, Atlanta........................ 15 00
Gem, 80; dropped April, 1880; bred by G. W. McFadden, Atlanta; sire, Comet, 35; dam, Allison ewe.

Ram and 5 ewes over 2 years old—8 entries.
Premium, G. W. McFadden, Atlanta........................ 20 00

Ram with 5 of his get, under 2 years old, of either sex, bred and owned by exhibiter—6 entries.
Premium, E. Peck & Sons, Geneva........................ 20 00
Rich, Jr., rams, Nos. 155, 158, 405; ewes, Nos. 282, 604.

Awarding Committee.—E. E. Bush, Elmwood; J. C. Ware, Mahomet; Isaac Bliss, Warsaw.

LOT 51—FRENCH, SILESIAN AND SAXONY MERINOS.

[No entries.]

LOT 52—FRENCH MERINOS, ETC.—SWEEPSTAKES.

[No entries.]

LOT 53—FLEECES.

LONG WOOL.

Fleece from sheep under 2 years old—4 entries·
Premium, D. C. Graham, Cameron.. $5 00

FINE WOOL.

Twelve-months' fleece from Sheep over 2 years old—3 entries:
Premium, Taylor Bros., Waynesville 5 00

Fleece from sheep under 2 years old—2 entries.
Premium, Taylor Bros., Waynesville 5 00

Awarding Committee.—A. L. Duncan, Aledo; W. K. Dunlap, Dunlap; H. H. Oliver, Toulon.

CLASS D—SWINE.

DAVID GORE, *Superintendent.*

LOT 54—BERKSHIRES.

BOARS.

Boar 2 years old or over—2 entries:
First premium, A. M. Fulford, Bel Air, Md... .... $20 00
Sterling Value; farrowed June 12, 1879; bred by H. Humphrey, Shrivenham, Eng.; sire, Devonshire Lane; dam, Ulster Lassie, 4,266.
Second premium, A. M. Fulford, Bel Air, Md.. 10 00
Robinhood, Jr., 4,117; farrowed September 2, 1880; bred by A. M. Fulford, Bel Air, Md.; Robinhood III, 2,117; dam, Lady Hood II, 4,528.

Boar 1 year old and under 2—5 entries:
First premium, Tilford Rice, Larchland.......................... .. .. 20 00
Duke; farrowed April, 1881; sire, Clark's Duke 4229; dam, Beauty 4100.
Second premium, John M. Daub, Jacksonville... .... 10 00

Boar under 1 year old—17 entries:
First premium, H. H. Clark, Onarga.. .... 15 00
Hero; farrowed October 4, 1881; bred by H. H. Clark, Onarga; sire, Clark's Duke; dam, Beauty.
Second premium, A. M. Fulford, Bel Air, Md.. 10 00
Billy; farrowed December 9, 1881; bred by A. M. Fulford, Bel Air, Md.; sire, Disraeli 813; dam, Fair Lady 8564.

SOWS.

Sow 2 years old or over—8 entries:
First premium, Taylor Bros., Waynesville.......... .... 20 00
Emma 7th 7460; farrowed June 4, 1878; bred by A. Ware, Washington, O.; Duke of Glendale 2461; dam, Emma 5th 4004.
Second premium, Tilford Rice, Larchland 10 00
Rosy Bell II 6970; farrowed May 4, 1880.

Sow 1 year old and under 2—8 entries:
First premium, A. M. Fulford, Bel Air, Md........................ .... 20 00
Ruby 4th; farrowed December 10, 1880; bred by J. Pittman King, North Stoke, Wallingford, Berks, Eng.; sire, Samson; dam, Ruby 3d.
Second premium, H. H. Clark, Onarga 10 00
Juliet II; farrowed April, 1881; bred by H. H. Clark, Onarga; sire, Clark's Duke; dam, Berkshire sow.

Sow under 1 year old—15 entries:
First premium, A. M. Fulford, Bel Air, Md. $15 00
Sally Smythe; farrowed December 8, 1881; bred by A. M. Fulford, Bel Air, Md.; sire, Smythe to-wit 1483; dam, Mrs. Smythe.
Second premium, Taylor Bros., Waynesville 10 00
Emeline; farrowed December 7, 1881; bred by Taylor Bros., Waynesville; sire, Charley Foster 2585; dam, Taylor's Beauty 7462.

BREEDING RINGS.

Sow with litter of her own pigs, not less than 5, under 6 months old—1 entry:
First premium, Tilford Rice, Larchland 20 00

Pen of breeding hogs, 1 boar and 4 sows, over 1 year old, owned by exhibiter—2 entries:
Premium, Tilford Rice, Larchland 25 00

Five head of swine of any age, the get of 1 boar, the sire shown with the pen, and considered in making the award—1 entry:
Premium, A. M. Fulford, Bel Air, Md. 20 00

Awarding Committee—John Christie, Wheaton; W. E. Barrett, Newton; G. Barrett, Elmwood; A. Y. Bartholomew, Elmwood; George Elliott, Harristown.

LOT 55—BERKSHIRES—SWEEPSTAKES.

Boar of any age—11 entries:
Premium, John M. Daub, Jacksonville $20 00

Sow of any age—13 entries:
Premium, Taylor Bros., Waynesville 20 00
Emma 7th.

Awarding Committee—H. D. Aney, Hartsburg; Z. D. Cantrell, Waynesville; J. Tabor Mathers, Jacksonville.

LOT 56—POLAND CHINA.

BOARS.

Boar 2 years old or over—1 entry:
First premium, A. Aiman, Tolono $20 00
Young Highlander; farrowed September, 1880; sire, Illinois Chief 951; dam, Lady Keever.

Boar 1 year old and under 2—7 entries:
First premium, H. H. Clark, Onarga 20 00
Don; farrowed April 9, 1881; bred by T. M. Reveal, Clermont, Ind.; sire, Pet Star; dam, Pet Corwin.
Second premium, Tilford Rice, Larchland 10 00
Magie Jr. 1043; farrowed October 23, 1880.

Boar under 1 year old—22 entries:
First premium, H. H. Clark, Onarga 15 00
Governor 4th; farrowed March 9, 1882; bred by H. H. Clark, Onarga; sire, Governor 3d 977; dam, Belle 2d 2576.
Second premium, Samuel B. Schofield, Panola 10 00

SOWS.

Sow, 2 years old or over—6 entries:
First premium, H. H. Clark, Onarga $20 00
Nelly K. 3540; farrowed March 28, 1879; bred by Zelton & Ronk, Ladoga, Ind.; sire, Hoosier Tom, 977; dam, Lady Armin.
Second premium, Tilford Rice, Larchland 10 00
Bell of Pike, 1318; farrowed May 26, 1880; sire, Duke 2d, 521; dam, Lady of Greer 5th, 1788.

Sow, 1 year old and under two—8 entries:
First premium, Tilford Rice, Larchland 20 00
Spotted Girl, 3898; farrowed April 28, 1881; sire, General Hancock, 549; dam, Spotted Girl, 2836.
Second premium, H. H. Clark, Onarga 10 00
Belle 2d; farrowed October 28, 1880; bred by H. H. Clark, Onarga; sire, Jo; dam, Nellie C. 3548.

Sow, under 1 year old—14 entries:
First premium, Tilford Rice, Larchland 15 00
Favorite; farrowed October 28, 1881; sire, General Hancock, 549; dam, Favorite, 1622.

Second premium, Tilford Rice, Larchland	$10 00
Beauty; farrowed October 21, 1881; sire, General Hancock, 519; dam, Belle of Pike, 1318.	

BREEDING RINGS.

Sow with litter of her own pigs, not less than 5, under six months old—8 entries:	
First premium, Samuel B. Schofield, Panola	20 00
Second premium, Tilford Rice, Larchland	10 00
Pen of breeding hogs—1 boar and 4 sows over 1 year old, owned by exhibiter—2 entries:	
Premium, H. H. Clark, Onarga	25 00
Five head of swine of any age, the get of 1 boar, the sire shown with the pen, and considered in making the award—6 entries:	
Premium, H. H. Clark, Onarga	20 00

Awarding Committee—M. F. Sterling, Aledo; W. M. Chiles, Carlinville; S. N. Riegle, Franklin Grove; Geo. W. Booth, Gardner; Homer C. Castle, Wilmington.

LOT 57—POLAND CHINA—SWEEPSTAKES.

Boar of any age—14 entries:	
Premium, Tilford Rice, Larchland	$20 00
Hero, 987; farrowed June 1, 1881; sire, Gen. Garfield, 567; dam, Mollie Dorsey, 1990.	
Sow of any age—17 entries:	
Premium, Tilford Rice, Larchland	20 00
Spotted Girl, 3868.	

Awarding Committee—George W. Pearsall, Maquon; Geo. W. Stoner, La Place; John M. Dane, Jacksonville.

LOT 58—CHESTER WHITE AND VICTORIA.

BOARS.

Boar, 2 years old or over—4 entries:	
First premium, John W. Boston, Jacksonville	$20 00
Second premium, Scheidt & Davis, Dyer, Ind	10 00
Boar, 1 year old and under 2—2 entries:	
First premium, Scheidt & Davis, Dyer, Ind	20 00
Second premium, Taylor Bros., Waynesville	10 00
Boar under 1 year old—10 entries	
First premium, J. A. Brown & Son, Decatur	15 00
Second premium, Taylor Bros., Waynesville	10 00

SOWS.

Sow, 2 years old or over—5 entries:	
First premium, Taylor Bros., Waynesville	20 00
Second premium, John W. Boston, Jacksonville	10 00
Sow, 1 year old and under 2—8 entries:	
First premium, J. A. Brown & Son, Decatur	20 00
Second premium, J. A. Brown & Son, Decatur	10 00
Sow, under 1 year old—8 entries:	
First premium, Taylor Bros., Waynesville	15 00
Second premium, Scheidt & Davis, Dyer, Ind	10 00

BREEDING RINGS.

Sow, with litter of her own pigs, not less than 5, under six months old—3 entries:	
First premium, Scheidt & Davis, Dyer, Ind	20 00
Second premium, J. A. Brown & Son, Decatur	10 00
Pen of breeding hogs—1 boar and 4 sows over 1 year old, owned by exhibiter—2 entries:	
Premium, Scheidt & Davis, Dyer, Ind	25 00

Five head of swine of any age, the get of 1 boar, the sire shown with the pen and considered in making the award—3 entries:

Premium, Scheidt & Davis, Dyer, Ind	$20 00

Awarding Committee—S. W. Riegle, Franklin Grove; W. W. McClung, Waterloo, Iowa; Jacob Weaver, Biggsville; E. L. Byington, Lanark; M. F. Sterling, Aledo.

LOT 59—CHESTER WHITE AND VICTORIA—SWEEPSTAKES.

Boar of any age—11 entries:

Premium, John W. Boston, Jacksonville	$20 00

Sow, of any age—12 entries:

Premium, J. A. Brown & Son, Decatur	20 00

Awarding Committee—J. Tabor Mathers, Jacksonville; Z. D. Cantrell, Waynesville; H. D. Aney, Hartsburg.

LOT 60—ESSEX.

BOARS.

Boar, 2 years old or over—3 entries:

First premium, Frank Wilson, Jackson, Mich	$20 00
Second premium, Taylor Bros., Waynesville	10 00

Boar, 1 year old and under 2—5 entries:

First premium, Abraham Reid, Jacksonville	20 00
Second premium, Taylor Bros., Waynesville	10 00

Boar, under 1 year old—6 entries:

First premium, Abraham Reid, Jacksonville	15 00
Second premium, Taylor Bros., Waynesville	10 00

SOWS.

Sow, 2 years old or over—5 entries:

First premium, Taylor Bros., Waynesville	20 00
Second premium, Abraham Reid, Jacksonville	10 00

Sow, 1 year old and under 2—8 entries:

First premium, Taylor Bros., Waynesville	20 00
Second premium, Frank Willson, Jackson, Mich	10 00

Sow, under 1 year old—10 entries;

First premium, Abraham Reid, Jacksonville	15 00
Second premium, Frank Willson, Jackson, Mich	10 00

BREEDING RINGS.

Sow, with litter of her own pigs, not less than five, under 6 months old—4 entries:

First premium, Frank Willson, Jackson, Mich	20 00
Second premium, Taylor Bros., Waynesville	10 00

Pen of breeding hogs, 1 boar and 4 sows, over 1 year old, owned by exhibiter—4 entries:

Premium, Abraham Reid, Jacksonville	$25 00

Five head of swine of any age, the get of 1 boar, the sire shown with the pen, and considered in making the award—5 entries:

Premium, Taylor Bros., Waynesville	20 00

Awarding Committee—E. W. Bryant, Princeton; W. M. Chiles, Carlinville; Harold Sorby, Guelph, Canada: Hiram T. Lape, Roseville; W. C. Norton, Aldenville, Pa.

LOT 61—ESSEX—SWEEPSTAKES.

Boar of any age—8 entries:

Premium, Abraham Reid, Jacksonville	$20 00

Sow of any age—9 entries:

Premium, Taylor Bros., Waynesville	20 00

Awarding Committee—Samuel Reid, Lincoln; E. L. Byington, Lanark; Alfred Fielding, Colusa; E. P. Denton, Hamilton; W, W. McClung, Waterloo. Iowa.

LOT 62—SMALL YORKSHIRE AND SUFFOLKS.

BOARS.

Boar, 2 years old or over—3 entries:
First premium, W. C. Norton, Aldenville, Pa. $20 00
King John VI, No. 14; farrowed June 3, 1877; bred by R. M. Hoe, N. Y. City; sire, King John, No. 5; dam, Snow Drop, No. 8.
Second premium, Frank Willson, Jackson, Mich. 10 00
——; farrowed April 18, 1880; bred by Frank Willson, Jackson, Mich.; sire, Suffolk boar; dam, Suffolk sow.

Boar, 1 year old and under 2—3 entries:
First premium, W. C. Norton, Aldenville, Pa. 20 00
Duke of Yorkshire XI; farrowed April 17, 1881; bred by Geo. W. Harris, Aldenville, Pa.; sire, Duke of Yorkshire, No. 1; dam, Snow Drop VII, No. 68.
Second premium, W. C. Norton, Aldenville, Pa. 10 00
Radnor; farrowed August 13, 1881; bred by Ridge Farm, Aldenville, Pa.; sire, King John VI, No. 14; dam, Grand Duchess XV, No. 71.

Boar under 1 year old—4 entries:
First premium, W. C. Norton, Aldenville, Pa. 15 00
Success II; farrowed October 15, 1881; bred by Ridge Farm, Aldenville, Pa.; sire, Success, No. 83; dam, Queen of York IV, No. 161.
Second premium, W. C. Norton, Aldenville, Pa. 10 00
Success III; farrowed October 15, 1881; bred by Ridge Farm, Aldenville, Pa.; sire, Success, No. 83; dam, Queen of York IV, No. 161.

SOWS.

Sow, 2 years old or over—4 entries:
First premium, W. C. Norton, Aldenville, Pa. 20 00
Snow Drop VIII, No. 70; farrowed October 10, 1878; bred by R. M. Hoe, N.Y. City; sire, Romeo, No. 15; dam, Snow Drop III, No. 55.
Second premium, Frank Willson, Jackson, Mich. 10 00
——; farrowed April 18, 1880; bred by Frank Willson, Jackson, Mich.; sire, Suffolk boar; dam, Suffolk sow.

Sow, 1 year old and under 2—4 entries:
First premium, W. C. Norton, Aldenville, Pa. 20 00
Snow Drop XIII, No. 191; farrowed April 17, 1881; bred by Geo. W. Harris, Aldenville, Pa.; sire, Duke of Yorkshire, No. 1; dam, Snow Drop VII, No. 68.
Second premium, Frank Willson, Jackson, Mich 10 00
——; farrowed March 22, 1881; bred by Frank Willson, Jackson, Mich.; sire, Suffolk boar; dam, Suffolk sow.

Sow, under 1 year old—5 entries:
First premium, W. C. Norton, Aldenville, Pa. 15 00
Queen of York X; farrowed October 15, 1881; bred by Ridge Farm, Aldenville, Pa.; sire, Success, No. 83; dam, Queen of York IV, No. 161.
Second premium, Frank Willson, Jackson, Mich. 10 00
——; farrowed March 16, 1882; bred by Frank Willson, Jackson, Mich.; sire, Suffolk boar; dam, Suffolk sow.

BREEDING RINGS.

Sow with litter of her own pigs, not less than 5, under 6 months old—2 entries:
First premium, W. C. Norton, Aldenville, Pa. $20 00
Second premium, Frank Willson, Jackson, Mich. 10 00

Pen of Breeding Hogs—1 boar and 4 sows over 1 year old, owned by exhibiter—2 entries:
Premium, W. C. Norton, Aldenville, Pa. 25 00

Five head of Swine of any age, the get of one boar, the sire shown with the pen, and considered in making the award—3 entries:
Premium, W. C. Norton, Aldenville, Pa. 20 00

Awarding Committee—Geo. S. Castle, Carlinville; V. Barber, Decatur; G. W. Stoner, LaPlace; Thos. Taylor, Waynesville; John W. Boston, Jacksonville.

LOT 63—SMALL YORKSHIRE AND SUFFOLKS—SWEEPSTAKES.

Boar of any age—5 entries:
Premium, W. C. Norton, Aldenville, Pa. $20 00
Success II.

Sow of any age—5 entries:
Premium, W. C. Norton, Aldenville, Pa. 20 00
Snow Drop VIII No. 70.

Awarding Committee—E. L. Byington, Lanark; E. P. Denton, Hamilton; Alfred Fielding, Colusa; Samuel Reed, Lincoln; W. W. M'Clung, Waterloo, Iowa.

LOT 64—OTHER DISTINCT BREEDS.

Show of Swine of any distinct breed not named in the Premium List—1 boar and not less than 5 sows of any age—4 entries :

First premium, G. W. Stoner, LaPlace	$25 00
Second premium, Railsback & Pittsford, Hopedale	15 00
Third premium, Railsback & Pittsford, Hopedale	10 00

Awarding Committee—E. L. Byington, Lanark; W. W. M'Clung, Waterloo, Iowa; Tilford Rice, Larchland; Jacob Weaver, Biggsville; H. C. Castle, Wilmington.

LOT 65—GRAND SWEEPSTAKES—HERDS.

Boar and 5 Sows, any age, each entry composed of animals of the same breed—15 entries :

First premium, W. C. Norton, Aldenville, Pa	$50 00
Second premium, A. M. Fulford, Bel Air, Md	25 00

Awarding Committee—Wm. Reynolds, Peoria; H. H. Oliver, Toulon; G. W. Rumely, Douglas.

CLASS E—POULTRY.

H. D. EMERY, *Superintendent.*

LOT 66—ASIATIC.

Pair Light Brahmas, fowls—8 entries :

First premium, Swain & Lenhart, Good Hope	$3 00
Second premium, J. H. Leaton, Bloomington	2 00

Pair Light Brahmas, chicks—8 entries :

First premium, Henry Davis, Dyer, Ind	3 00
Second premium, J. H. Butler, Bloomington	2 00

Pair Dark Brahmas, fowls—6 entries :

First premium, W. F. Herman, Wapella	3 00
Second premium, Swain & Lenhart, Good Hope	2 00

Pair Dark Brahmas, chicks—3 entries :

First premium, W. F. Herman, Wapella	3 00
Second premium, Blenz & Wheelock, Decatur	2 00

Pair Buff Cochins, fowls—6 entries :

First premium, Blenz & Wheelock, Decatur	3 00
Second premium, J. H. Leaton, Bloomington	2 00

Pair Buff Cochins, chicks—11 entries :

First premium, Blenz & Wheelock, Decatur	3 00
Second premium, Blenz & Wheelock, Decatur	2 00

Pair Partridge Cochins, fowls—14 entries :

First premium, Geo. V. Frink, Bloomington	3 00
Second premium, Geo. V. Frink, Bloomington	2 00

Pair Partridge Cochins, chicks—7 entries :

First premium, Geo. V. Frink, Bloomington	3 00
Second premium, Geo. Knusman, Peoria	2 00

Pair White Cochins, fowls—8 entries :

First premium, J. H. Leaton, Bloomington	3 00
Second premium, W. F. Herman, Wapella	2 00

ington	3 00
mington	2 00

Pair Black Cochins, fowls—10 entries :

First premium, J. H. Leaton, Bloomington	3 00
Second premium, Swain & Lenhart, Good Hope	2 00

Pair Black Cochins, chicks—4 entries :

First premium, J. C. Darnell, Elmwood	3 00
Second premium, J. H. Foster, Elmwood	2 00

Awarding Committee—J. B. Matthews, Marissa; J. C. Kimzey, Tamaroa; John F. Fulton, Petersburg.

LOT 67—DORKING, DOMINIQUE, PLYMOUTH ROCK.

Pair Silver Gray, fowls—3 entries :	
First premium Swain & Lenhart, Good Hope	$3 00
Second premium, W. F. Herman, Wapella	2 00
Pair Silver Gray, chicks—2 entries :	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair White, chicks—1 entry :	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair Colored, fowls—1 entry :	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair Colored Chicks—3 entries:	
First premium, Swain & Lenhart, Good Hope	3 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair American Dominiques, fowls—1 entry:	
First premium, Swain & Lenhart, Good Hope	3 00
Pair Plymouth Rocks, fowls—6 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair Plymouth Rocks, chicks—16 entries:	
First premium, W. F. Herman, Wapella	3 00
Second premium, Henry Schimpff, Peoria	2 00

Awarding Committee—H. Ringhouse, Bloomington; Eli Harvey, Sibley: E. L. Williams, Geneseo; M. D. Hauberg, Port Byron; C. W. Jordan, Morris; H. G. Masher, Toulon; J. H. Foster, Elmwood.

LOT 68—SPANISH.

Pair Black Spanish (white face) fowls—3 entries:	
First premium, Swain & Lenhart, Good Hope	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair Black Spanish, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair White Leghorn, fowls—3 entries:	
First premium, Blenz & Wheelock, Decatur	3 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair White Leghorn, chicks—7 entries;	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, Blenz & Wheelock, Decatur	2 00
Pair Brown Leghorn, fowls—3 entries:	
First premium, Blenz & Wheelock, Decatur	3 00
Second premium, Swain & Lenhart. Good Hope	2 00
Pair Brown Leghorn, chicks—6 entries:	
First premium, W. F. Herman, Wapella	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair Dominique Leghorn, fowls—1 entry:	
First premium, Swain & Lenhart, Good Hope	3 00
Pair Dominique Leghorn, chicks—2 entries:	
First premium, Swain & Lenhart, Good Hope	3 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair Black Leghorn, fowls—3 entries:	
First premium, Blenz & Wheelock, Decatur	3 00
Second premium, Swain & Lenhart. Good Hope	2 00
Pair Black Leghorn, chicks—3 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00

LOT 69—HAMBURGS.

Pair Golden-pencilled, fowls—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair Golden-Spangled, fowls—2 entries:	
First premium, Swain & Lenhart, Good Hope	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00

Pair Golden-spangled, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	$3 00
Pair Silver-spangled, fowls—4 entries:	
First premium, Swain & Lenhart, Good Hope	3 00
Second premium, J. H. Foster, Elmwood	2 00
Pair Silver-spangled, chicks—2 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair Black, fowls—4 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair Black, chicks—2 entries:	
First premium, Blenz & Wheelock, Decatur	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair White, chicks—1 entry:	
First premium, Swain & Lenhart, Good Hope	3 00

Awarding Committee—J. H. Foote, Elmwood; A. H. Howes, Bloomington.

Lot 70—POLISH.

Pair Golden-spangled, fowls—2 entries:	
First premium, Swain & Lenhart, Good Hope	3 00
Second premium, Blenz & Wheelock, Decatur	2 00
Pair Golden-spangled, chicks—4 entries:	
First premium (none worthy).	
Second premium, Swain & Lenhart, Good Hope	2 00
Pair Silver-spangled, chicks—1 entry:	
First premium, W. F. Herman, Wapella	3 00
Pair White-crested Black, fowls—2 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair White-crested Black, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair White, fowls—1 entry;	
First premium, P. A. Bartlett, Jacksonville	3 00

Awarding Committee—C. W. Jordan, Morris; A. H. Howes, Bloomington.

Lot 71—FRENCH.

Pair Houdon, fowls—6 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair Houdon, chicks—2 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair Crevecour, fowls—1 entry;	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair Crevecour, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00

Awarding Committee—G. W. Jordan, Morris; M. D. Hauberg, Port Byron; A. H. Howes, Bloomington.

Lot 72—GAME.

Pair Black-breasted Red, fowls—8 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, Blenz & Wheelock, Decatur	2 00
Pair Black-breasted Red, chicks—7 entries:	
First premium, Mrs. Nannie Taylor, Jacksonville	3 00
Second premium, Mrs. Nannie Taylor, Jacksonville	2 00

Pair White, fowls—1 entry:	
Second premium, P. A. Bartlett, Jacksonville	$2 00
Pair Brown Red, fowls—2 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, Henry Schimpff, Peoria	2 00
Pair Brown Red, chicks—2 entries:	
First premium, Henry Schimpff, Peoria	3 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair Ginger Red, fowls—1 entry:	
Second premium, W. F. Herman, Wapella	2 00
Pair Yellow Duck-wing, fowls—1 entry:	
First premium, P. A. Partlett, Jacksonville	3 00
Pair Pile, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair White Pile, fowls—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair White Pile, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair Black, chicks—1 entry:	
First premium, Blenz & Wheelock, Decatur	3 00

Awarding Committee—H. Ringhouse, Bloomington; G. Knusman, Peoria; A. J. Ludlam, Atlanta.

Lot 73—BANTAMS.

Pair Sebright, fowls—5 entries:	
First premium, J. H. Leaton, Bloomington	$3 00
Second premium, J. H. Leaton, Bloomington	2 00
Pair Sebright, chicks—2 entries.	
First premium, J. H. Leaton, Bloomington	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair Red Pile Game, fowls—2 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, H. Ringhouse, Bloomington	2 00
Pair Red Pile Game, chicks—4 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair White, fowls—2 entries:	
First premium, Swain & Lenhart, Good Hope	3 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair White, chicks—1 entry:	
First premium, Swain & Lenhart, Good Hope	3 00
Pair Black fowls—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair Japan, fowls—1 entry:	
First premium, J. H. Leaton, Bloomington	3 00
Pair Japan, chicks—4 entries:	
First premium, J. H. Leaton, Bloomington	3 00
Second premium, J. H. Leaton, Bloomington	2 00
Pair Black Red Game, fowls—6 entries:	
First premium, J. H. Leaton, Bloomington	3 00
Second premium, J. H. Leaton, Bloomington	2 00
Pair Black Red Game, chicks—3 entries:	
First premium, J. H. Foster, Elmwood	3 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair Duck-wing, fowls—4 entries:	
First premium, J. H. Foster, Elmwood	3 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair Duck-wing, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00

Awarding Committee—A. H. Howes, Bloomington; W. F. Herman, Wapella; W. Schenck, Maroa.

LOT 74—MISCELLANEOUS.

Pair Silkies, fowls—1 entry:	
First premium, Swain & Lenhart, Good Hope	$3 00
Pair Rumpless, fowls—1 entry:	
First premium, Swain & Lenhart, Good Hope	3 00
Pair Pea-fowls—1 entry:	
First premium, Blenz & Wheelock, Decatur	3 00

Awarding Committee—A. Wheelock, Decatur; A. J. Ludlam, Atlanta.

LOT 75—GUINEAS.

Pair White, fowls—3 entries:	
First premium, Mrs. Nannie Taylor, Jacksonville	3 00
Second premium, Mrs. Nannie Taylor, Jacksonville	2 00
Pair White, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair Common, fowls—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00

Awarding Committee—R. D. Smith, Pekin; A. J. Ludlam, Atlanta; N. Hall, Bloomington.

LOT 76—TURKEYS.

Pair Bronze, fowls—2 entries:	
First premium, P. A. Bartlett, Jacksonville	$4 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair Bronze, chicks—2 entries:	
First premium, P. A. Bartlett, Jacksonville	4 00
Second premium, W. T. Schenck, Maroa	2 00
Pair Black, fowls—2 entries:	
First premium, P. A. Bartlett, Jacksonville	4 00
Second premium, Wm. Peterson, Stark	2 00
Pair Black, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	4 00
Pair Slate, fowls—1 entry:	
First premium, P. A. Bartlett, Jacksonville	4 00
Pair White, fowls—4 entries:	
First premium, Wm. T. Schenck, Maroa	4 00
Second premium, Blenz & Wheelock, Decatur	2 00

Awarding Committee—R. D. Smith, Pekin; N. Hall, Bloomington; A. J. Ludlam, Atlanta.

LOT 77—DUCKS.

Pair Aylesbury—4 entries:	
First premium, Blenz & Wheelock, Decatur	$3 00
Second premium, Blenz & Wheelock, Decatur	2 00
Pair Rouen—3 entries:	
First premium, W. F. Herman, Wapella	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair Cayuga—1 entry:	
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair White Muscovy—3 entries:	
First premium, Swain & Lenhart, Good Hope	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair Colored Muscovy—3 entries:	
First premium, Blenz & Wheelock, Decatur	3 00
Second premium, Swain & Lenhart, Good Hope	2 00
Pair White Crested—2 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, W. F. Herman, Wapella	2 00

Pair Pekin—12 entries:

First premium, H. Ringhouse, Bloomington	$3 00
Second premium, P. A. Bartlett, Jacksonville	2 00

Pair Call—5 entries:

First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, Swain & Lenhart, Good Hope	2 00

Pair East Indian or Lebrador—1 entry:

First premium, W. F. Herman, Wapella	3 00

Awarding Committee—N. Hall, Bloomington; A. J. Ludlam, Atlanta; R. D. Smith, Pekin.

LOT 78—GEESE.

Pair Embden—3 entries:

First premium, P. A. Bartlett, Jacksonville	4 00
Second premium, Blenz & Wheelock, Decatur	2 00

Pair Toulouse—5 entries:

First premium, P. A. Bartlett, Jacksonville	4 00
Second premium, Blenz & Wheelock, Decatur	2 00

Pair White China—5 entries:

First premium, P. A. Bartlett, Jacksonville	4 00
Second premium, Blenz & Wheelock, Decatur	2 00

Pair African—3 entries:

First premium, Blenz & Wheelock, Decatur	4 00
Second premium, P. A. Bartlett, Jacksonville	2 00

Awarding Committee—N. Hall, Bloomington; R. D. Smith, Pekin; A. J. Ludlam, Atlanta.

LOT 79—RABBITS.

Pair White Angoras—1 entry:

First premium, Blenz & Wheelock, Decatur	3 00

Pair Himalay—2 entries:

First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00

Awarding Committee—H. Ringhouse, Bloomington; W. F. Herman, Wapella.

LOT 80—FERRETS.

Pair English Ferrets—2 entries:

First premium, John Thorn, Mossville	3 00
Second premium, John Thorn, Mossville	2 00

Pair American White Ferrets—2 entries:

First premium, John Thorn, Mossville	3 00
Second premium, John Thorn, Mossville	2 00

Awarding Committee—N. Hall, Bloomington; A. J. Ludlam, Atlanta; R. A. D. Smith, Pekin.

LOT 81—DISPLAYS.

Display of varieties of Poultry—5 entries:

First premium, P. A. Bartlett, Jacksonville	$15 00
Second premium, Swain & Lenhart, Good Hope	10 00

Display of Pigeons, 10 varieties—4 entries:

First premium, Blenz & Wheelock, Decatur	10 00
Second premium, P. A. Bartlett, Jacksonville	5 00

Awarding Committee—A. S. Ross, Pontiac.

CLASS F—MECHANICS.

Section 1.

WM. VOORHIES, JR., *Superintendent.*

LOT 82—STOVES, CASTINGS, WORKED METALS, ETC.

Display of Stoves, Ranges, Tin and Copper Ware:
  First premium, Culter & Proctor Stove Co., Peoria .... Diploma and $20 00
  Second premium, A. Sandmeyer & Co., Peoria 10 00

Display of Brass and Iron Wire work:
  Premium, H. R. Van Epps, Peoria .... Silver Medal

Display of Fire-arms:
  Premium, James Donn & Bro., Canton .... Silver Medal

Display of Silver-plated Ware:
  Premium, Peoria Plating Works .... $5 00 and Silver Medal

Weather Strips:
  Premium, J. Chandler, Warsaw .... Diploma

Awarding Committee—R. Lespinane, Chicago; Thomas Gunning, Piper City; Chas. H. Yates, Chatsworth; F. B. Fargo, Lake Mills, Wis.; H. Brown, Jr. Peoria.

LOT 83—HOUSEHOLD FURNITURE.

Display of General Household Furniture:
  First premium, Comstock, Avery and Co., Peoria .... Diploma and $20 00

Twelve Brooms:
  Premium, John Kirkman, Peoria .... Silver Medal

Churn:
  Premium, Cornish and Curtis, Ft. Atkinson, Wis .... Silver Medal

Washing Machine:
  Premium, McCord & Co., Green Valley, Ill .... Silver Medal

Awarding Committee—R. Lespinane, Chicago; Thomas Gunning, Piper City; Chas. H. Yates, Chatsworth; F. B. Fargo, Lake Mills, Wis.; H. Brown, Jr., Peoria.

LOT 84—MANUFACTURES OF VARIOUS KINDS.

Display of Rockingham Ware:
  Premium, Peoria Pottery Co., Peoria .... Silver Medal

Display of Bound Blank Books, Printing, Writing and Wrapping Paper:
  Premium, Adair & Brown, Peoria .... Silver Medal

Display of Dental and Surgical Instruments:
  Premium, G. T. Gray, Peoria .... Silver Medal

Display of Crackers, Confections and Candies:
  Premium, Spring & Hoke, Peoria .... Silver Medal

Display of Dry Goods and Carpets:
  Premium, Day Bros., Peoria .... Silver Medal

Display of Boots and Shoes:
  Premium, Bauer & Trefzger, Peoria .... Silver Medal

Display of Hats and Caps:
  Premium, Geo. W. Gilbert, Peoria .... Silver Medal

Set of Carriage Harness:
  Premium, H. N. Frederick, Peoria .... Silver Medal

Set of Single Buggy Harness:
Premium, H. N. Frederick, Peoria...... ....Silver Medal

Gentlemen's Saddle:
Premium, H. N. Frederick, Peoria..Silver Medal

Ladies Saddle:
Premium, H. N. Frederick, Peoria...... ....Silver Medal

Horse Collar:
Premium, H. N. Frederick, Peoria ....Silver Medal

Awarding Committee—R. Lespinane, Chicago; Thomas Gunning, Piper City; Chas. H. Yates, Chatsworth; F. B. Fargo, Lake Mills; H. Brown, jr., Peoria.

LOT 85—SEWING AND KNITTING MACHINES AND SPINNING WHEELS.

No premiums awarded in this Lot, but every facility afforded for exhibition.

CLASS F—MECHANICS.

Section 2.

B. PULLEN, *Superintendent.*

LOT 86—ENGINES, MACHINERY, ETC.

Portable Farm Steam Engine:
Premium, Eagle Machine Works, Indianapolis, Ind......................... ...Diploma

Traction Steam Engine:
Premium, Hooven, Owens & Renschler Co., Hamilton, O.... ....Diploma

Pump for Well:
Premium, Mast, Foos & Co., Springfield, O......................... ......Silver Medal

Pump for Cistern:
Premium, Mast, Foos & Co., Springfield, O..................................Silver Medal

Water Elevator other than Pump:
Premium, J. W. Avery, Peoria..Silver Medal

Portable Grist-mill, for Farm use.
Premium, American Grinding Mill Co., Chicago....................... ....Diploma

Saw-Mill and Engine, for Lumber:
Premium, Eagle Machine Works, Indianapolis, Ind....... .... Silver Medal

Machine for making Drain Tile:
Premium, Chandler & Taylor, Indianapolis, Ind........... ....Diploma and $20 00

Machine for making Brick:
Premium, Chandler & Taylor, Indianapolis, Ind ....Diploma

Road-making Machine:
Premium, S. Pennock & Sons, Indianapolis, Ind............. ....Diploma and $20 00

Road-scraper:
Premium, Ewald Over, Indianapolis, Ind......................................Silver Medal

Potato-Digger:
Premium, Geo. W. Rouse & Son, Peoria......................................Silver Medal

Horse Hay-Fork:
Premium, J. E. Porter, Ottawa................ ....Silver Medal

Horse Hay Derrick, for Stacking:
Premium, John E. Kirk, Peoria...Silver Medal

Hay Elevator and Carrier, for moving Hay in Barn:
Premium, J. E. Porter, Ottawa...Silver Medal

Portable Hay Press:
Premium, P. K. Dederick & Co., Albany, N. Y.................................Diploma

Horse Power, for General Farm purposes:
Premium, Taylor Horse Power Co., Chicago..Silver Medal

Clover Huller and Thresher:
Premium, Geo. W. Rouse & Son., Peoria..Silver Medal

Hay and Straw Huller:
Premium, Keystone Manufacturing Co., Sterling..Silver Medal

Root and Vegetable Cutter:
Premium, John C. Green, Peoria. ....Silver Medal

Mower-knife Grinder:
Premium, Tate Bros. & Co., Decatur..Silver Medal

Display of Flower Pots:
Premium, Peoria Pottery Co., Peoria..Silver Medal

Awarding Committee—Wm. Mack, Chicago; David R. Ross, Jerseyville; W. K. Dunlap, Dunlap; W. H. Beekman, Moline; John M. Davis, Peoria.

LOT 87—LIGHT MACHINES.

No entries.

LOT 88—IMPLEMENTS, VEHICLES, ETC.

Steaming Apparatus for Cooking food for Stock:
Premium, T. W. M'Falane..Silver Medal

Iron Fence and Gate:
Premium, Mast, Foos & Co., Springfield, O..Silver Medal

Gate for Farm use:
Premium, A. Havenhill, Newark..Silver Medal

Hay and Cattle Scales for Farm use:
Premium, Chas. Bruner, Peru..Silver Medal

Display of two-seated Carriages of various kinds:
Premium, Geo. Pfeiffer & Co., Peoria..Silver Medal

Display of Buggies:
Premium, Kingman & Co., Peoria..Silver Medal

Two-horse Carriage:
Premium, Geo. Pfeiffer & Co., Peoria..Silver Medal

Top Buggy:
Premium, Enterprise Carriage Works, Peoria..Silver Medal

Open Buggy:
Premium, Kingman & Co., Peoria..Silver Medal

Sulky:
Premium, Kingman & Co., Peoria..Silver Medal

Barouche:
Premium, Enterprise Carriage Works, Peoria..Silver Medal

Two-horse Wagon:
Premium, Geo. Pfeiffer & Co., Peoria..Silver Medal

Spring Wagon:
Premium, Geo. Pfeiffer & Co., Peoria..Silver Medal

One-horse Cart:
Premium, Gay & Son, Ottawa..Silver Medal

Awarding Committee—J. A. Whittington, Lawn Ridge; Robert Smith, Smithville; J. B. Lathy, Upper Alton; W. A. Jordan, Morris.

LOT 89—FARM MACHINERY.

No premiums awarded, nor examination by committee, but every facility afforded for exhibition.

CLASS G—FARM PRODUCTS.

J. M. WASHBURN, *Superintendent.*

LOT 90—GRAINS AND SEEDS.

White Winter Wheat, 1 bushel:	
First premium, L. G. Clute, Manchester, Iowa	$10 00
Second premium, Wm. T. Schenck, Maroa	5 00
Red Winter Wheat, 1 bushel:	
First premium, Blenz & Wheelock, Decatur	10 00
Second premium, L. G. Clute, Manchester, Iowa	5 00
Red Spring Wheat, 1 bushel:	
First premium, L. G. Clute, Manchester, Iowa	10 00
Second premium, Frank Willson, Jackson, Mich	5 00
Rye, 1 bushel:	
First premium, Hiram Sibley & Co., Chicago	5 00
Second premium, L. G. Clute, Manchester, Iowa	3 00
Oats, 1 bushel:	
First premium, L. G. Clute, Manchester, Iowa	5 00
Second premium, Wm. T. Schenck, Maroa	3 00
Fall Barley, 1 bushel:	
First premium, L. G. Clute, Manchester, Iowa	5 00
Spring Barley, 1 bushel:	
First premium, L. G. Clute, Manchester, Iowa	5 00
Second premium, Wm. T. Schenck, Maroa	3 00
White Indian Corn, in the ear, 1 bushel:	
First premium, W. Jackson, DuQuoin	5 00
Second premium, J. J. Arnold, Hilton	3 00
Yellow Indian Corn, in the ear, 1 bushel:	
First premium, J. H. DeHority, Hilton	5 00
Second premium, J. H. Cox, Wyoming	3 00
Field Corn, five stalks:	
First premium, J. H. Cox, Wyoming	3 00
Second premium, Hiram Sibley & Co., Chicago	2 00
Pop Corn, in the ear, 1 peck:	
First premium, John Short, Peoria	3 00
Second premium, O. B. Galusha, Morris	2 00
Sweet Corn, in the ear, half bushel:	
First Wm. T. Schenck, Maroa	3 00
Second premium, John Short, Peoria	2 00
Buckwheat, one bushel:	
First premium, Frank Willson, Jackson, Mich	5 00
Second premium, Hiram Sibley & Co., Chicago	2 00
Timothy Seed, one bushel:	
First premium, Hiram Sibley & Co., Chicago	5 00
Second premium, Wm. T. Schenck, Maroa	2 00
Clover seed, 1 bushel:	
First premium, Hiram Sibley & Co., Chicago	5 00
Second premium, L. G. Clute, Manchester, Iowa	2 00
Blue-Grass Seed—1 bushel:	
First premium, L. G. Clute, Manchester, Iowa	5 00
Second premium, Hiram Sibley & Co., Chicago	2 00
Orchard-Grass Seed, 1 bushel:	
First premium, Hiram Sibley & Co., Chicago	5 00
Second premium, L. G. Clute, Manchester, Iowa	2 00
Flax Seed, 1 bushel:	
First premium, Hiram Sibley & Co., Chicago	5 00
Second premium, Wm. T. Schenck, Maroa	2 00

Red-Top Grass Seed, 1 bushel;	
First premium, L. G. Clute, Manchester, Iowa	$5 00
Second premium, Hiram Sibley & Co., Chicago	2 00
Bale of Broom Corn:	
First premium, C. H. Gore, Trivoli	5 00
Second premium, C. C. Randall, Elmwood	2 00
White Field Beans, ½ bushel:	
First premium, L. G. Clute, Manchester, Iowa	5 00
Second premium, James G. Corben, Peoria	2 00
Lima Beans, 1 peek:	
First premium, Joseph Shaaff, Peoria	5 00
Second premium, John Short, Peoria	2 00
Variety of Garden Peas, 1 quart each:	
Premium, Hiram Sibley & Co., Chicago	2 00
Castor Beans, 1 bushel:	
Premium, L. G. Clute, Manchester, Iowa	10 00
Display of Grains and Seeds, distinct from foregoing samples, consisting of one quart of Grain and one Pint of Seed:	
Premium, L. G. Clute, Manchester, Iowa	Diploma and 30 00

Awarding Committee.—W. H. Allen, Southampton; Warren Kinzie, Peoria; C. A. Percival, Savoy.

LOT 91—VEGETABLES.

Early Irish Potatoes, 1 bushel:	
First premium, J. P. Beck, Peoria	$5 00
Second premium, O. B. Galusha, Morris	3 00
Late Irish Potatoes, 1 bushel:	
First premium, Joseph Shaaff, Peoria	5 00
Second premium, J. Fink, Hilton	3 00
Sweet Potatoes, 1 bushel:	
First premium, J. P. Beck, Peoria	5 00
Second premium, John Short, Peoria	3 00
Onions, 1 bushel:	
First premium, J. P. Beck, Peoria	4 00
Second premium, J. P. Beck, Peoria	2 00
Table Turnips, 1 bushel:	
First premium, Joseph Shaaff, Peoria	4 00
Second premium, Joseph Shaaff, Peoria	2 00
Table Beets, 1 bushel:	
First premium, Joseph Shaaff, Peoria	4 00
Second premium, Hiram Sibley & Co., Chicago	2 00
Mangel Wurzels, 1 bushel:	
First premium, Hiram Sibley & Co., Chicago	4 00
Second premium, J. P. Heading, Peoria	2 00
Table Turnips, 1 bushel:	
First premium, Mrs. Jos. Schnebley, Peoria	4 00
Second premium, J. P. Heading, Peoria	2 00
Cauliflower:	
First premium, L. G. Clute, Manchester, Iowa	4 00
Celery, 12 stalks:	
First premium, Barnett Bros., Chicago	4 00
Second premium, Jacob H. Birrecommer, Freeport	2 00
Cabbage, 6 heads:	
First premium, Joseph Shaaff, Peoria	4 00
Second premium, Philip Romann, Peoria	2 00
Tomatoes, 1 peck:	
First premium, H. Wiesehan, Peoria	4 00
Second premium, Philip Romann, Peoria	2 00
Six Pumpkins:	
Second premium, John Short, Peoria	2 00

Six Squashes:	
First premium, Joseph Shaaff, Peoria	$4 00
Second premium, J. P. Beck, Peoria	2 00
Six Watermelons:	
First premium, J. H. Cox, Wyoming	4 00
Second premium, L. B. Thomas, Fond du Lac	2 00
Six muskmelons:	
First premium, L. B. Thomas, Fondulac	4 00
Second premium, Joseph Shaaff, Peoria	2 00
Carrots, ½ bushel:	
First premium, Hiram Sibley & Co., Chicago	5 00
Second premium, Joseph Shaaff, Peoria	3 00
Six Egg-plant, fruit:	
First premium, L. G. Clute, Manchester, Iowa	4 00
Second premium, Joseph Shaaff, Peoria	2 00
Variety of Garden Seeds, named:	
First premium, Hiram Sibley & Co., Chicago	10 00
Second premium, L. G. Clute, Manchester, Iowa	5 00
Sugar Beets, 1 bushel:	
First premium, Joseph Shaaff, Peoria	5 00
Second premium, Joseph Shaaff, Peoria	3 00
Display of Garden Vegetables—twenty varieties, samples distinct from foregoing:	
First premium, Joseph Shaaff, Peoria	10 00
Second premium, James G. Corben, Peoria	5 00

Awarding Committee—Jonathan B. Allen, Delavan; John Cunningham, Newmansville; John Carr, Dunlap.

LOT 92—BUTTER, CHEESE, ETC.

Barrel Winter Wheat Flour:	
Premium, Stavy & Sons, Delavan	Diploma
Barrel Spring Wheat Flour:	
Premium, Chas. A. Pillsbury & Co., Minneapolis, Minn	Diploma
Butter made any time during the year—10 pounds:	
First premium, Mrs. Mary Schnebley, Peoria	$10 00
Second premium, Mrs. Joseph Schnebley, Peoria	5 00
Butter made in May or June—10 pounds:	
First premium, Miss Hannah M. Heading, Peoria	10 00
Second premium, Mrs. Josiah Moffett, Wyoming	5 00
Fresh Butter—10 pounds:	
First premium, Mrs. R. H. Gaston, Toulon	10 00
Second premium, Mrs. Mary Schnebley, Peoria	5 00
Cheese, 1 year old or over:	
First premium, West Hallock Factory, West Hallock	10 00
Second premium, Frank E. Stone, Lawn Ridge	5 00
Cured Cheese, under 1 year old:	
First premium, Frank E. Stone, Lawn Ridge	10 00
Second premium, West Hallock Factory, West Hallock	5 00
New Cheese:	
First premium, West Hallock Factory, West Hallock	10 00
Second premium, J. E. Potter, Alta	5 00
Display of Cheese—samples distinct from foregoing:	
Premium, West Hallock Factory, West Hallock	15 00
Comb Honey—10 pounds:	
First premium, John Short, Peoria	5 00
Second premium, F. A. Baller, Bloomington	3 00
Extracted Honey—10 pounds:	
First premium, John Short, Peoria	5 00
Second premium, Mrs. John S. Kellar, Peoria	3 00
Machine for Extracting Honey:	
Premium, Mrs. L. Harrison, Peoria	5 00

Awarding Committee—Mrs. L. Fiske, R. R. Smith, T. H. Shane, John Buffum.

LOT 98—BREAD, CAKES, ETC.

Loaf of Wheat Bread—Hop yeast:

First premium, Mrs. Jos. Schnebley, Peoria	4 00
Second premium, Ella McFadden, Peoria	2 00

Loaf of Wheat Bread—Milk rising:

First premium, Mrs. J. Nearing, Kenney	4 00
Second premium, Miss M. Moffett, Tonica	2 00

Loaf of Bread—unbolted flour:

First premium, Mrs. Wm. Horton, Weston	4 00
Second premium, Miss M. O. Bestor, Peoria	2 00

Loaf of Rye Bread:

First premium, Mrs. John S. Kellar, Peoria	4 00
Second premium, Mrs. Wm. Horton, Weston	2 00

Loaf of Corn Bread:

First premium, Mrs. M. P. Carlock, Atlanta	4 00
Second premium, Mrs. M. J. Campbell, Peoria	2 00

Sponge Cake:

First premium, Miss Ella K. Wiley, Dunlap	4 00
Second premium, Mrs. E. A. Long, Peoria	2 00

Snow Cake:

First premium, Mrs. Mary Schnebley, Peoria	4 00
Second premium, Mrs. T. J. Black, Peoria	2 00

Pound Cake:

First premium, Ella McFadden, Peoria	4 00
Second premium, Mrs. R. H. Gaston, Toulon	2 00

Jelly Cake:

First premium, Mrs. Cellie Keene, Atlanta	4 00
Second premium, Mrs. John S. Kellar, Peoria	2 00

Fruit Cake:

First premium, Miss Maud Hinsey, Pekin	4 00
Second premium, Mrs. J. M. Gipps, Peoria	2 00

Silver Cake:

First premium, Mrs. R. H. Gaston, Toulon	4 00
Second premium, Mrs. J. P. Becker, Peoria	2 00

Gold Cake:

First premium, J. Larosh, Pekin	4 00
Second premium, Mrs. E. A. Long, Peoria	2 00

Nut Cake:

First premium, Mrs. M. P. Carlock, Atlanta	4 00
Second premium, Miss Ella K. Wiley, Dunlap	2 00

Doughnuts:

First premium, Mrs. J. Nearing, Kenney	4 00
Second premium, Mrs. John S. Kellar, Peoria	2 00

Ginger Cake:

First premium, Mrs. M. P. Carlock, Atlanta	4 00
Second premium, Mrs. J. P. Becker, Peoria	2 00

Marble Cake:

First premium, Mrs. H. G. Kingman, Peoria	4 00
Second premium, Mrs. Cellie Keene, Atlanta	2 00

Orange Cake:

First premium, Mrs. John S. Kellar, Peoria	4 00
Second premium, Mrs. A. G. Stowell, Peoria	2 00

Lemon Cake:

First premium, Mrs. John S. Kellar, Peoria	4 00
Second premium, Mrs. A. E. Weamer, Havana	2 00

Cocoanut Cake:

First premium, Mrs. John S. Kellar, Peoria	4 00
Second premium, Mrs. Cellie Keene, Atlanta	2 00

Queen of the Prairie Cake:

First premium, Mrs. M. P. Carlock, Atlanta	4 00
Second premium, Mrs. Mary Schnebley, Peoria	2 00

Chocolate Cake:

First premium, Ella McFadden, Peoria	4 00
Second premium, Mrs. John S. Kellar, Peoria	2 00

Quart of Sorghum Molasses:	
First premium, Mrs. J. F. Robinson, Atlanta	$4 00
Second premium, Mrs. Cellie Keene, Atlanta	2 00
Pound of Browned Coffee:	
Premium, Mrs. J. D. Soules, Peoria	1 00
Can of Sweet Corn:	
Premium, Mrs. J. F. Robinson, Atlanta	2 00
Can of Corn:	
Premium, Mrs Wm. Horton, Weston	2 00

Awarding Committee—John Buffum, Andalusia; Mrs. F. A. Noble, Princeville; Alfred R. Allen, Southampton.

LOT 94—BREAD AND CAKES.

By girl under 14 years of age.

Loaf of Wheat Bread—hop yeast:	
First premium, Lucy C. Schnebley, Peoria	$4 00
Second premium, Lou Keene, Atlanta	2 00
Loaf of Wheat Bread—milk rising:	
First premium, Lina Carlock, Atlanta	4 00
Loaf of Bread—unbolted flour:	
First premium, Lina Carlock, Atlanta	4 00
Second premium, Iva Robinson, Atlanta	2 00
Loaf of Rye Bread:	
First premium, Lou Keene, Atlanta	4 00
Second premium, Lina Carlock, Atlanta	2 00
Loaf of Corn Bread:	
First premium, Lina Carlock, Atlanta	4 00
Second premium, Lou Keene, Atlanta	2 00
Sponge Cake:	
First premium, Iva Robinson, Atlanta	4 00
Second premium, Lucy C. Schnebley, Peoria	2 00
Pound Cake:	
First premium, Jennie Taylor, Jacksonville	4 00
Jelly Cake:	
First premium, Lou Keene, Atlanta	4 00
Second premium, Iva Robinson, Atlanta	2 00
Fruit Cake:	
First premium, Jennie Taylor, Jacksonville	4 00
Silver Cake:	
First premium, Iva Robinson, Atlanta	4 00
Second premium, Jennie Taylor, Jacksonville	2 00
Gold Cake:	
First premium, Jennie Taylor, Jacksonville	4 00
Nut Cake:	
First premium, Lina Carlock, Atlanta	4 00
Doughnuts:	
First premium, Lina Carlock, Atlanta	4 00
Second premium, Lou Keene, Atlanta	2 00
Ginger Cake:	
First premium, Lina Carlock, Atlanta	4 00
Second premium, Lou Keene, Atlanta	2 00

Awarding Committee—Alfred R. Allen, Southampton; Mrs. Charles Gehrmann, Peoria Mrs. O. B. Nichols, Carlyle; Mrs. F. A. Noble, Princeville.

CLASS H.—HORTICULTURE AND FLORICULTURE.

Section 1—Trees, Flowers, Plants, Etc.

LOT 95—TREES, FLOWERS AND PLANTS.

For Professional Florists and Dealers only.

Collection of distinct varieties of Green-house and Hot-house Plants—specimens not entered for other premiums:	
First premium, J. T. Shoaff, Peoria	Diploma and $30 00
Second premium, Wm. Cation, Peoria	20 00
Third premium, James Cole, Peoria	10 00
Collection of Agaves and Aloes:	
Premium, James Cole, Peoria	3 00
Collection of Cactus, excluding Agaves and Aloes;	
Premium, George Frederick, Peoria	3 00
Collection of Echeverias and Succulents:	
Premium, George Frederick, Peoria	3 00
Varieties of Rex Begonias;	
Premium, John Bauscher, Freeport	3 00
Collection of Tuberous-rooted Begonias.	
Premium, James Cole, Peoria	3 00
Collection of species Begonias not named above:	
Premium, George Frederick, Peoria	3 00
Collection of Winter-flowering Begonias	
Premium, George Frederick, Peoria	3 00
Collection of Geraniums.	
First premium, James Cole, Rockford	8 00
Second premium, George Frederick, Peoria	5 00
Six single varieties of Geraniums;	
Premium, James Cole, Rockford	3 00
Six Double Varieties of Geraniums:	
Premium, Wm. Cation, Peoria	3 00
Collection of Foliage and Variegated Geraniums:	
First premium, John Bauscher, Freeport	3 00
Second premium, George Frederick, Peoria	2 00
Collection of Achyranthus:	
Premium, George Frederick, Peoria	3 00
Collection of Abutilons in bloom:	
Premium, George Frederick, Peoria	3 00
Collection of Carnations, in bloom:	
Premium, James Cole, Peoria	3 00
Six Double Fuchsias, in bloom:	
Premium, John Bauscher, Freeport	3 00
Six Single Fuchsias, in bloom:	
Premium, John Bauscher, Freeport	3 00
Collection of Roses in pots, in bloom:	
Premium, James Cole, Peoria	8 00
Pair of Hanging Baskets of Plants:	
First premium, George Frederick, Peoria	3 00
Single Hanging Basket of Plants:	
First premium, George Frederick, Peoria	2 00
Single Specimen Plant of any kind:	
Premium, George Frederick, Peoria	4 00
Single Specimen Hot-house Foliage Plant:	
Premium, Miss Minnie Shoaff, Peoria	4 00

Collection of Palms:	
First premium, James Cole, Peoria	$8 00
Single Palm:	
Premium, James Cole, Peoria	4 00
Single Ficus:	
Premium, George Frederick, Peoria	4 00
Collection of Ferns:	
Premium, George Frederick, Peoria	6 00
Collection of Mosses:	
Premium, George Frederick, Peoria	3 00
Collection of Hot and Green-house Climbers:	
First premium, George Frederick, Peoria	3 00
Collection of Cannas.	
First premium, Geo. Frederick, Peoria	3 00
Collection of Coleus:	
First premium, Geo. Frederick, Peoria	4 00
Twelve Crotons:	
First premium, James Cole, Peoria	5 00
Collection of bulbs, correctly named:	
Premium, Hiram Sibley & Co. Silver medal and	5 00

Awarding Committee.—J. T. McConnell, Jacksonville; A. Bryant, Jr., Princeton; Jas. Crow, Crystal Lake.

LOT 96—CUT FLOWERS.

FOR PROFESSIONAL FLORISTS.

Collection of Cut Flowers:	
First premium, F. A. Baller, Bloomington	$8 00
Second premium, Geo. Frederick, Peoria	4 00
Collection of Antirrhinums:	
Premium, Geo. Frederick, Peoria	3 00
Collection of Asters.	
First premium, E. Wyman & Co., Rockford	5 00
Collection of Dahlias, named:	
First premium, E. Wyman & Co., Rockford	5 00
Second premium, F. A. Baller, Bloomington	3 00
Collection of 18 Dahlias, dissimilar bloom:	
First premium, Thos. Franks, Champaign	5 00
Second premium, E. Wyman & Co., Rockford	3 00
Collection of Pompone, or Bouquet Dahlias, 6 varieties:	
First premium, E. Wyman & Co., Rockford	3 00
Second premium, F. A. Baller, Bloomington	2 00
Collection of Everlastings:	
Premium, Hiram Sibley & Co., Chicago	4 00
Collection of Grasses:	
Premium, C. W. Dorr & Co., DesMoines, Iowa	4 00
Display of Cut Roses:	
First premium, F. A. Baller, Bloomington	10 00
Second premium, E. Wyman & Co., Rockford	5 00
Collection of Gladioli:	
First premium, E. Wyman & Co., Rockford	10 00
Collection of Pansies:	
First premium, E. Wyman & Co., Rockford	5 00
Second premium, Wm. Cation, Peoria	3 00
Collection of Phlox Drummondi:	
First premium, E. Wyman & Co., Rockford	5 00
Second premium, Geo. Frederick, Peoria	3 00
Collection of Tube Roses:	
First premium, James Cole, Peoria	4 00
Second premium, Wm. Cation, Peoria	2 00

Collection of Ten-weeks' Stock:	
Premium, E. Wyman & Co., Rockford	$3
Collection of Verbenas, named	
First premium, Wm. Cation, Peoria	5 00
Second premium, James Cole, Peoria	3 00
Collection of Verbenas, raised from seed:	
First premium, Geo. Frederick, Peoria	5 00
Second premium, E. Wyman & Co., Rockford	3 00
Collection of Cut Geraniums:	
First premium, James Cole, Peoria	5 00
Second premium, Wm. Cation, Peoria	3 00
Collection of Salpiglossis:	
Premium, E. Wyman & Co., Rockford	3 00
Collection of Double Zinnias.	
First premium, E. Wyman & Co., Rockford	5 00
Collection of Double Petunias:	
First premium, E. Wyman & Co., Rockford	5 00
Collection of Single Petunias:	
First premium, E. Wyman & Co., Rockford	5 00
Second premium, Geo. Frederick, Peoria	3 00
Collection of Cut Flowers (including above):	
Premium, E. Wyman & Co., Rockford	Diploma.

FLORAL DESIGNS, BOUQUETS, ETC.

Floral Design:	
First premium, Thos. Franks, Champaign	$15 00
Second premium, James Cole, Peoria	10 00
Design of Dahlias:	
Premium, E. Wyman & Co., Rockford	5 00
Floral Wreath:	
Premium, James Cole, Peoria	5 00
Design of Cut Flowers.	
Premium, E. Wyman & Co., Rockford	5 00
Pair of Flat Hand-Bouquets:	
Premium, Thos. Franks, Champaign	5 00
Pair of Round Hand-Bouquets:	
Premium, James Cole, Peoria	5 00
Basket of Cut Flowers:	
Premium, Thos. Franks, Champaign	5 00
Basket of Winter Flowers:	
Premium, Hiram Sibley & Co., Chicago	5 00
Pair of Bouquets of Grasses:	
Premium, Thos. Franks, Champaign	5 00
Bouquet of Winter Flowers.	
Premium, Thos. Franks, Champaign	5 00
Pair of Bridal Bouquets:	
Premium, James Cole, Peoria	5 00
Harp or Lyre:	
Premium, James Cole, Peoria	5 00
Cross:	
Premium, Thos. Franks, Champaign	5 00
Crown:	
Premium, E. Wyman & Co., Rockford	5 00
Display of Florist's Requisites:	
Premium, Hiram Sibley & Co., Chicago	Silver medal and $20 00

Awarding Committee.—J. T. McConnell, Jacksonville; G. M. Wherritt, Mt. Carroll; B. F. Fuller, Washington.

LOT 97—FLOWERS AND PLANTS.

BY AMATEURS.

[No professional Florist allowed to compete.]

Collection of Green-house, Hot-house and Bedding Plants, in Pots:	
First premium, Miss Cora Van Epps, Peoria	$12 00
Second premium, Jacob H. Birrecommer, Freeport	8 00
Collection of Cactus and Aloes:	
First premium, Albert Bausher, Freeport	3 00
Collection of Geraniums:	
First premium, Jacob H. Birrecommer, Freeport	3 00
Pair of Hanging Baskets of Plants:	
First premium, Miss Cora Van Epps, Peoria	3 00
Wardian case, filled with plants:	
Premium, Albert Bauscher, Peoria	4 00

Awarding Committee—G. M. Wherritt, Mt. Carroll; Mrs. Wm. Parlin, Canton; B. F. Fuller, Washington.

LOT 98—CUT FLOWERS.

[No professional Florist allowed to compete.]

Collection of Cut Flowers:	
First premium, Mrs. C. Hinsey, Pekin	5 00
Second premium, Miss Hannah M. Heading, Peoria	3 00
Collection of Asters:	
First premium, Miss Hannah M. Heading, Peoria	2 00
Second premium, Mrs. C. Hinsey, Pekin	1 00
Collection of Balsams:	
Premium, Mrs. C. Hinsey, Pekin	2 00
Collection of Dahlias, named—10 varieties:	
First premium, Jacob H. Birrecommer, Freeport	3 00
Second premium, Mrs. C. Hinsey, Pekin	2 00
Collection of Dahlias, Bouquet or Pompone:	
First premium, Mrs. C. Hinsey, Pekin	2 00
Second premium, Jacob H. Birrecommer, Freeport	1 00
Collection of Everlastings:	
First premium, Mrs. C. Hinsey, Pekin	2 00
Second premium, Miss Maud Hinsey, Pekin	1 00
Collection of Pinks:	
First premium, Jacob H. Birrecommer, Freeport	3 00
Second premium, Mrs. C. Hinsey, Pekin	2 00
Collection of Single Petunias:	
First premium, Jacob H. Birrecommer, Freeport	3 00
Second premium, Hannah M. Heading, Peoria	2 00
Collection of Double Petunias:	
First premium, Mrs. C. Hinsey, Pekin	3 00
Collection of Pansies:	
First premium, Jacob H. Birrecommer, Freeport	2 00
Second premium, Mrs. C. Hinsey, Pekin	1 00
Collection of Phlox Drummondi:	
First premium, Jacob H. Birrecommer, Freeport	3 00
Second premium, Hannah M. Heading, Peoria	2 00
Collection of Verbenas:	
First premium, Jacob H. Birrecommer, Freeport	2 00
Second premium, Mrs. C. Hinsey, Pekin	1 00
Double Zinnia:	
First premium, Jacob H. Birrecommer, Freeport	2 00
Second premium, Miss Hannah M. Heading, Peoria	1 00

FLORAL DESIGNS, BOUQUETS, ETC.

Floral Design:	
First premium, Miss Maud Hinsey, Pekin	15 00
Second premium, Miss Florence Peck, Jacksonville	10 00

Floral Design of Dahlias:	
Premium, Mrs. C. Hinsey, Pekin	$3 00
Floral Pyramid or Mound	
Premium, Mrs. C. Hinsey, Pekin	3 00
Floral Wreath:	
Premium, Miss Maud Hinsey, Pekin	3 00
Floral Design of Cut Flowers:	
Premium, Mrs. C. Hinsey, Pekin	3 00
Pair Flat Hand Bouquets.	
First premium, Mrs H. G. Kingman, Peoria	2 00
Second premium, Mrs. M. C. Stevens, Peoria	1 00
Pair Round Hand Bouquets	
First premium, Miss Maud Hinsey, Pekin	2 00
Second premium, Mrs. C. Hinsey, Pekin	1 00
Pair Grass Bouquets.	
First premium, Miss Florence Peck, Jacksonville	2 00
Second premium, Miss Maud Hinsey, Pekin	1 00
Basket of Cut Flowers:	
First premium, Miss Maud Hinsey, Pekin	3 00
Second premium, Miss Hannah M. Heading, Pekin	2 00
Winter Basket of Flowers, Leaves and Mosses.	
First premium, Miss Florence Peck, Jacksonville	3 00
Second premium, Mrs. C. Hinsey, Pekin	2 00
Pair of Winter Bouquets	
First premium, Mrs C. Hinsey, Pekin	3 00
Second premium, Miss Maud Hinsey, Pekin	2 00
Floral Heart	
Premium, Miss Maud Hinsey, Pekin	3 00
Floral Dove:	
Premium, Miss Maud Hinsey, Pekin	3 00
Floral Star:	
Premium, Miss Maud Hinsey, Pekin	3 00

Awarding Committee—Mrs. Wm. Parlin, Canton; B. F. Fuller, Washington; G. M. Whorritt, Mt. Carroll.

Section 2—Fruits, etc.

LOT 99—HOME-GROWN FRUITS.

For Professional Fruit-Growers and Orchardists.

Collection of Fruits by a Horticultural Society, grown within the territorial limits of the Society exhibiting:	
First premium, Horticultural Society, Warsaw	$50 00
Second premium, Horticultural Society, Champaign	25 00
Collection of Apples (Crabs excepted) 25 varieties:	
First premium, D. F. Emfry, Carthage, Mo	25 00
Second premium, A, C. Hammond, Warsaw	15 00
Collection of Apples for Southern Illinois, value for market purposes considered—15 varieties:	
First premium, G. H. Baker, Cobden	15 00
Second premium, John Cline, Jr., Watson	10 00
Collection of Apples for Central Illinois, value for market purposes considered—15 varieties:	
First premium, James T. Johnson, Warsaw	15 00
Second premium, A. C. Hammond, Warsaw	10 00
Collection of Apples for Northern Illinois, value for market purposes considered—15 varieties:	
First premium, O. B. Galusha, Morris	15 00
Second premium, C. E. Maurland, Chicago	10 00
Collection of Pears, product of Illinois—6 varieties:	
First premium, A. C. Hammond, Warsaw	5 00
Second premium, H. M. Dunlap, Champaign	3 00
Collection of Autumn Pears, product of Illinois—5 varieties.	
First premium, A. C. Hammond, Warsaw	5 00
Second premium, H. M. Dunlap, Champaign	3 00

Collection of Winter Pears, product of Illinois—3 varieties:

First premium, H. M. Dunlap, Champaign	$5 00
Second premium, A. C. Hammond, Warsaw	3 00

Collection of Peaches, named—6 varieties:

First premium, A. C. Hammond, Warsaw	5 00

Collection of Seedling Peaches.

First premium, John Cline, Jr., Watson	4 00

Twelve Quinces:

First premium, H. M. Dunlap, Champaign	2 00

Display of Grapes, correctly named:

First premium, H M. Dunlap, Champaign	10 00

Early Grapes—3 bunches:

First premium, H. M. Dunlap, Champaign	4 00

Three varieties of late grapes for table use—3 bunches each·

First premium, H. M. Dunlap, Champaign	4 00

Three varieties of Wine Grapes—3 bunches each:

First premium, H. M. Dunlap, Champaign	3 00

Most attractive and artistically arranged Display of Fruits

First premium, A. C. Hammond, Warsaw	8 00
Second premium, H. H. Dunlap, Champaign	5 00

Awarding Committee—Lloyd Shaw, Peoria; F. A. Baller, Bloomington; B F. Fuller, Washington.

LOT 100—HOME-GROWN FRUITS, BY AMATEUR.

Collection of Apples—10 varieties

First premium, John R. Smith, Galesburg.	8 00
Second premium, Clarence M. Johnson, Warsaw	5 00

Collection of Apples—6 varieties

First premium, Clarence M. Johnson, Warsaw	5 00
Second premium, Miss Kate Baker, Cobden	3 00

Collection of Pears·

First premium, Jonas Larosh, Pekin	3 00
Second premium, Jacob H. Birrecommer, Freeport	2 00

Collection of Peaches

First premium, John O. Cline, Jr., Watson	3 00
Second premium, Mrs. E. Johnson, Peoria	2 00

Collection of Plums·

First premium, John Bauscher, Freeport	3 00

Early Grapes—4 bunches:

First premium, J. V. N. Standish, Galesburg	4 00
Second premium, John Bauscher, Freeport	2 00

Three varieties of Late Grapes, 3 bunches each;

First premium, J. V. N. Standish Galesburg	4 00
Second premium, Mrs L. Harrison, Peoria	2 00

Three varieties of Wine Grapes—3 bunches each:

First premium. J. V. N. Standish, Galesburg	4 00
Second premium, John Bauscher, Freeport	2 00

Eight varieties of Apples for Southern Illinois:

First premium, Miss Kate Baker, Cobden	6 00.
Second premium, John O. Cline jr., Watson	4 00

Eight varieties of Apples for Central Illinois·

First premium, E. L. Dunlap, Savoy	6 00
Second premium, Clarence M. Johnson, Warsaw	4 00

Eight varieties of Apples for Northern Illinois:

First premium, John Bauscher, Freeport	6 00

Display of Grapes:

First premium, J. V. N. Standish	6 00

Awarding Committee.—Lloyd Shaw, Peoria; F. A. Baller, Bloomington; B. F. Fuller, Washington.

LOT 101—JELLIES, PRESERVES, PICKLES, ETC.

Six or more varieties of Fruit Jelly—including Apple, Plum, Quince, Crab-apple, Peach and Cherry:
First premium, Mrs. J. F. Robinson, Atlanta. $6 00
Second premium, Mrs. Cellie Keene, Atlanta 4 00

Six or more varieties of Small Fruit Jelly—including Currant, Grape, Blackberry, Raspberry, Strawberry and Gooseberry:
First premium, Mrs. Cellie Keene, Atlanta 6 00
Second premium, Mrs. J. F. Robinson, Atlanta 4 00

Display of Jellies (Samples not entered for other premiums):
First premium, Mrs Cellie Keene, Atlanta 12 00
Second premium, Mrs. J. F. Robinson, Atlanta 8 00

Six or more varieties of Canned Fruit (including Apple, Plum, Quince, Crab-apple, Peach, Cherry and Tomato):
First premium, Mrs. Cellie Keene, Atlanta 6 00
Second premium, Mrs. Wm. Horton, Weston 4 00

Six or more varieties of Canned Small Fruit (including Currant, Grape, Blackberry, Raspberry, Strawberry and Gooseberry):
First premium, Mrs. Cellie Keene, Atlanta 6 00
Second premium, Mrs. J. F. Robinson, Atlanta 4 00

Display of Canned Fruits (Samples not entered for other premiums):
First premium, Mrs. Cellie Keene, Atlanta 12 00
Second premium, Mrs. J. F. Robinson, Atlanta 8 00

Ten or more varieties of Preserved Fruits (including Crab-apple, Quince, Grape, Pear, Strawberry Cherry and Tomato).
First premium, Mrs. Cellie Keene, Atlanta 8 00
Second premium, Mrs. J. F. Robinson, Atlanta 5 00

Six or more varieties of Fruit Butter (including Apple, Peach, Pear, Plum, Quince and Crab-apple).
First premium, Mrs. J. F. Robinson, Atlanta 6 00
Second premium, Mrs. Cellie Keene, Atlanta 4 00

Six or more varieties of Fruit Jam (including Currant, Blackberry, Raspberry. Strawberry, Grape and Gooseberry):
First premium, Mrs. Cellie Keene, Atlanta 6 00
Second premium, Mrs. J. F. Robinson, Atlanta 4 00

Ten or more varieties of Sour Pickles (including Cucumber, Cabbage, Onion, Mixed Pickles, Picalilli, Chow-Chow, Gherkins, Peaches, Mangoes and Cherries):
First premium, Mrs. Cellie Keene, Atlanta 6 00
Second premium, Mrs. John S. Kellar, Peoria 4 00

Five or more varieties of Sauces, Relishes, Catsups, etc. (including Tomato, Walnut and Cucumber Catsups, Cider Vinegar and Table Sauce):
First premium, Mrs. Cellie Keene, Atlanta 6 00
Second premium, Mrs. J. F. Robinson, Atlanta 4 00

Display of Horticultural Implements, by manufacturer or dealer:
Premium, Hiram Sibley & Co Diploma and $20 00

Awarding Committee.—Mrs. Franks, Champaign; F. E. Baker, Champaign; O W. Hoff, Wataga.

CLASS I—FINE AND LIBERAL ARTS.

JOHN P. REYNOLDS, *Superintendent.*

LOT 102—FINE ARTS.

Specimen of Sulpture:
Premium, Triebel & Son, Peoria Diploma

Collection of Statuary:
Premium, Triebel & Son, Peoria Silver Medal

Collection of Sculpture:
Premium, Triebel & Son, Peoria Silver Medal

Original Oil Painting of an Illinois Landscape:
First premium, Miss Mary Lewis, Springfield .... Diploma and $30 00
Second premium, Newkirk & Pay, Peoria 15 00

Fancy Painting, in Oil:
Premium, Miss Anna Ruth, Peoria .... Silver Medal

Animal Painting, in Oil:
Premium, Newkirk & Pay, Peoria .... Diploma

Fruit Painting, in Oil:
Premium, Miss Nettie A. Linville, Peoria .... Diploma

Five Oil Paintings:
Premium, Miss Nettie A. Linville, Peoria .... Silver Medal

Flower Painting, in Water Colors:
Premium, A. Voigt, Pekin .... Diploma

Bird Painting, in Water Colors:
Premium, Newkirk & Pay, Peoria .... Diploma

Portrait, in Pastile:
Premium, Loquist Bros., Peoria .... Silver Medal

Free-hand Portrait, in Crayon:
Premium, I. K. E. Burt, Peoria .... Diploma

Free-hand Crayon Drawing, other than Portrait:
Premium, John M. Stout, Ripley .... Silver Medal

Solar-print Portrait, in Crayon:
Premium, Thos. Mills, Peoria .... Silver Medal

Plain Photograph.
Premium, J. A. Van Drelzen, Peoria .... Silver Medal

Photograph, in India Ink:
Premium, Loquist Bros., Peoria .... Silver Medal

Photograph, in Water Colors:
Premium, Chas. E. Smith, Peoria .... Silver Medal

Copied Work, touched in India Ink:
Premium, Mrs. L. Walkup, Rockford .... Silver Medal

Twelve Stereoscopic Views:
Premium, Thos. Mills, Peoria .... Diploma

Oil-Colored Photograph:
Premium, Loquist Bros., Peoria .... Silver Medal

Porcelain Painting and Gilding:
Premium, John M. Stout, Ripley .... Silver Medal

Painting on Silk:
Premium, Mrs. Jeannette Miller, Peoria .... Silver Medal

Awarding Committee—Paul S. Lietz, Peoria; C. P. Smith, Jacksonville; H. Jacobs, Peoria.

LOT 103—MUSICAL INSTRUMENTS.

Violin:
Premium, C. C. Randall, Elmwood .... Silver Medal

Bass and Tenor Drum:
Premium, Adair & Brown, Peoria .... Diploma

Reed Organ:
Premium, Adair & Brown, Peoria .... Diploma

Grand or Semi-grand Piano:
Premium, Adair & Brown, Peoria .... Diploma

Flute:
Premium, Adair & Brown, Peoria .... Diploma

Clarionet and Guitar:
Premium, Adair & Brown, Peoria .... Silver Medal

Boudoir Piano:
Premium, Adair & Brown, Peoria .... Silver Medal

Awarding Committee—F. H. Aulley, Knoxville; Mrs. H. Powers, Galesburg; Miss Bell White, Farmington.

LOT 104—PRINTING, ENGRAVING, PENMANSHIP AND DECORATIVE ART DESIGNING.

Collection of 5 Steel Engravings:
Premium, Newkirk & Pay, Peoria.......... Diploma

Seal Engraving:
Premium, Newkirk & Pay, Peoria.......... Silver Medal

Pencil Drawing:
Premium, Mrs. T. S. Neal, Quincy.......... Diploma

Exhibit Business Penmanship by Com. College:
Premium, J. Geo. Cross. Bloomington.......... Diploma

Exhibit Ornamental Penmanship by Com. College:
Premium, Business College, Jacksonville.......... Diploma

Pen Drawing:
Premium, Business College, Davenport, Ia.......... Diploma

Pen Lettering:
Premium, Business College, Jacksonville.......... Silver Medal

Course in General Bookkeeping:
Premium, A. S. Parish, Peoria.......... Diploma

Course in Farm Bookkeeping:
Premium, Business College, Jacksonville.......... Silver Medal

Awarding Committee—Seneca Tupper, Morris; J. E. Pillsbury, Peoria; Otis Baker, Morris.

LOT 104½—ARCHITECTURAL AND MECHANICAL DRAWINGS—NO ENTRIES.

LOT 105—WAX, FEATHER, HAIR WORK, ETC.

White Wax-Work:
First premium, Mrs. T. S. Neal, Quincy.......... $2 00
Second premium, Mrs. T. L. O'Harra, Peoria.......... 1 00

Colored Wax-Work:
First premium, M. A. Entwistle, Peoria.......... 2 00
Second premium, Mrs. Josephine Street, Peoria.......... 1 00

Work in Hair:
First premium, Mrs. Mary A. Stevens, Galesburg.......... 2 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind.......... 1 00

Shell-Work:
First premium, Mrs. J. F. Robinson, Atlanta.......... 2 00

Fancy Worsted Bouquet or Wreath:
First premium, Miss Bettie Bench, Mossville.......... 2 00
Second premium, Miss I. Ulrich, Peoria.......... 1 00

Bead-Work:
First premium, Mrs. P. D. Stagg, Greensburg, Ind.......... 2 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind.......... 1 00

Mosaic or Papier-Mache Work:
First premium, Mrs. W. E. Shutt, Springfield.......... 2 00
Second premium, Philip Romann, Peoria.......... 1 00

Agricultural Wreath:
First premium, Miss Maggie Moblo, Peoria.......... 2 00

Oramental Work with Indelible Fluid:
First premium, Mrs. Norman Howe, Peoria.......... 2 00
Second premium, Mrs. W. E. Shutt, Springfield.......... 1 00

Awarding Committee.—Mrs. L. T. Marsters, Peoria; Miss Ollie Shoaff, Peoria; Miss Alice J. Heading, Peoria.

CLASS K—TEXTILE FABRICS.

E. H. BISHOP, *Superintendent.*

LOT 106—MILL FABRICS, ETC.

Display of Fur Robes :	
Premium, S. B. Hartz & Co., Peoria	Diploma

Awarding Committee—Miss Achsah Emerson, Toulon; Miss Belle Cliffe, Peoria; Miss A. M. Prout, Toulon.

LOT 107—HOUSEHOLD FABRICS.

Ten yards of Flannel :	
First premium, Mrs. Wm. Horton, Weston	$4 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind.	2 00
Pair of Blankets :	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	5 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	3 00
Display of Yarns :	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	3 00
Second premium, Mrs. J. Nearing, Kenney	2 00
Pair Ladies' Stockings :	
First premium, Mrs. P D. Stagg, Greensburg, Ind	3 00
Second premium, Mrs. J. Nearing, Kenney	2 00
Pair of Men's Socks :	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	3 00
Second premium, Mrs. J. F. Robinson, Atlanta	2 00
Pair of Gloves :	
First premium, Mrs. Wm. Horton, Weston	3 00
Pair of Mittens :	
First premium, Miss Bettie Rench, Mossville	3 00
Second premium, Mrs. Wm. Stevenson, Little Indian	2 00
Coverlet :	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	5 00
Second premium, Mrs. J. Nearing, Kenney	3 00
Ten yards of Jeans :	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	5 00
Ten yards Linsey :	
First premium, Mrs. J. Nearing, Kenney	4 00
Second premium, Mrs. J. Nearing, Kenney	2 00
Ten yards Carpet :	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	5 00
Ten yards of Rag Carpet :	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	5 00
Second premium, Mrs. A. E. Weamer, Havana	3 00
Foot-Mat made of Wool :	
First premium, Mrs. J. Nearing, Kenney	3 00
Second premium, Mrs. J. D. Soules, Peoria.	2 00
Carpet Warp, Spun by Exhibiter :	
First premium, Mrs. J. F. Robinson, Atlanta	2 00
Second premium, Mrs. J. Nearing, Kenney	1 00
Parlor Rug, Raised Wool-work :	
First premium, Mrs. J. Nearing, Kenney	3 00
Hearth-Rug, Wool :	
First premium, Miss Fannie Vaughan, Wheaton	3 00
Second premium, Mrs. Julia M. Ballance, Peoria	2 00
Hearth-Rug, Rags :	
First premium, Mrs. J. D. Soules, Peoria	3 00
Second premium, Mrs. C. Hinsey, Pekin	2 00

Carriage Mat:

First premium, Miss Anna Miller, Quincy	$3 00
Second premium, Mrs. Wm. Horton, Weston	2 00

Awarding Committee—Mrs. Buffington, Andalusia; Mrs. W. H. Fahnestock, Peoria; Mrs. John Leach, Jacksonville.

LOT 108—HAND-SEWING.

Comprising Plain Garments.

Coarse Shirt, unbleached:

First premium, Mrs. H. G. Kingman, Peoria	$3 00
Second premium, Mrs. Wm. Horton, Weston	2 00

Fine Shirt, unwashed:

First premium, Mrs. J. Nearing, Kenney	3 00
Second premium, V. B. Becraft, Jacksonville	2 00

Plain Night Dress:

First premium, Mrs. P. D. Stagg, Greensburg, Ind	3 00
Second premium, Mrs. J. Nearing, Kenney	2 00

Plain Chemise:

First premium, V. B. Becraft, Jacksonville	3 00
Second premium, Mrs. P. D. Stagg, Greensbnrg, Ind	2 00

Calico Dress:

First premium, Mrs. T. S. Neal, Quincy	3 00
Second premium, Miss Anna Miller, Quincy	2 00

Pair of Pantaloons:

First premium, Mrs. Wm. Horton, Weston	3 00

Vest:

First premium, Mrs. Wm. Horton, Weston	3 00

Boy's Suit:

First premium, Mrs. T. S. Neal, Quincy	3 00
Second premium, Mrs. J. F. Robinson, Atlanta	2 00

Darning and Repairing:

First premium, Mrs. J. B. Gault, Knoxville	3 00
Second premium, Miss Maud Hinsey, Pekin	2 00

Kitchen Apron:

First premium, Miss Maud Hinsey, Pekin	2 00
Second premium, Mrs. L. D. Robinson, Monmouth	1 00

Awarding Committee—Mrs. E. C. Skeavington, Albion; Mrs. E. Landrigan, Albion, Mrs. J. K. Smith, Sandwich.

LOT 109—ORNAMENTAL NEEDLE-WORK, ETC.

Braiding:

First premium, Mrs. J. Nearing, Kenney	$3 00
Second premium, Miss Maud Hinsey, Pekin	2 00

Braided Pillow-case or Sham:

First premium, Mrs. J. Nearing, Kenney	3 00
Second premium, Mrs. T. S. Neal, Quincy	2 00

Hemstitching:

First premium, V. B. Becraft, Jacksonville	3 00
Second premium, Miss Anna Miller, Quincy	2 00

Silk Embroidery:

First premium, Mrs. P. D. Stagg, Greensburg, Ind	3 00
Second premium, Mrs. E. O. Jones, Delavan	2 00

Worsted Embroidery:

First premium, Miss Carrie A. Wilmes, Chicago	3 00
Second premium, Mrs. J. B. Gault, Knoxville	2 00

Cotton Embroidery:

First premium, Miss L. Allen, Decatur	2 00
Second premium, Mrs. J. D. Soules, Peoria	1 00

Silver Embroidery:	
First premium, John A. Bush, Peoria	$3 00
Second premium, Mrs. W. E. Shutt, Springfield	2 00
Gold Embroidery:	
First premium, John A. Bush, Peoria	3 00
Second premium, Mrs. W. E. Shutt, Springfield	2 00
Linen Embroidery:	
First premium, Mrs. J. Nearing, Konney	3 00
Second premium, Miss Maud Hinsey, Pekin	2 00
Kensington Embroidery:	
First premium, Miss Eva Connell, Jacksonville	3 00
Second premium, Mrs. D. D. Mendenhall, Elmwood	2 00
Chair Cover, Back and Seat:	
First premium, Miss Anna Miller, Quincy	4 00
Second premium, Mrs. E. O. Jones, Delavan	2 00
Cover for Ottoman, or Foot-rest:	
First premium, Miss Anna Miller, Quincy	4 00
Second premium' Miss Fannie Vaughan, Wheaton	2 00
Sofa Pillow·	
First premium, Mrs. J. Nearing, Kenney	4 00
Second premium, Mrs. J. Nearing, Kenney	2 00
Carriage Afghan:	
First premium, Mrs. C. W. McLane, Jacksonville	8 00
Second premium, Miss Alice M. Dodge, Peoria	4 00
Infant Afghan:	
First premium, Miss M O. Bestor, Peoria	4 00
Second premium, Mrs. T. S. Nell, Quincy	2 00
Infant Robe:	
First premium, Miss C. Hinsey, Pekin	4 00
Second premium, Mrs. A. E. Weamer, Havana	2 00
Toilet Set, Embroidered:	
First premium, Miss Anna Miller, Quincy	3 00
Second premium, Miss Maud Hinsey, Pekin	2 00
Set Toilet Mats, on Canvass:	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	3 00
Second premium, Miss Eva Connell, Jacksonville	2 00
Infant Skirt, Embroidered.	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	3 00
Second premium, Miss Maud Hinsey, Pekin	2 00
Worsted Tapestry Work.	
First premium, Mrs. J. Nearing, Kenney	3 00
Second premium, Mrs. T. S. Neal, Quincy	2 00
Japanese Tidy·	
First premium, Mrs. J. Nearing, Kenney	2 00
Second premium, Mrs. C. Hinsey, Pekin	1 00
Embroidered Silk Tidy:	
First premium, Mrs. J. B. Gault, Knoxville	3 00
Second premium, Miss Maud Hinsey, Pekin	2 00
Worsted Tapestry Picture:	
First premium, Mrs. Kate Howser, Peoria	4 00
Second premium, Mrs. Annie Harris, Peoria	2 00
Stamping for Embroidery:	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	2 00
Second premium, Mrs. J. F. Robinson, Atlanta	1 00
Guipure Lace:	
First premium, Miss Maud Hinsey, Pekin	2 00
Second premium, Mrs. L. H. Choney, Peoria	1 00
Embroidered Pillow Case or Sham:	
First premium, Mrs. C. Hinsey, Pekin	3 00
Second Premium, Mrs. J. D. Soules, Peoria	2 00
Chenille Embroidery:	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	3 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	2 00
Lambrequin for Window:	
First premium, Miss Anna Miller, Quincy	3 00

Lambrequin for Mantel:	
First premium, Miss Anna Miller, Quincy	$3 00
Second premium, Mrs. T. S Neal, Quincy	2 00

Lambrequin for Bracket:	
First premium, Miss Fannie Vaughan, Wheaton	3 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	2 00

Embroidered Piano Cover:	
First premium, Miss Alice M. Dodge, Peoria	4 00

Embroidered Table Cover:	
First premium, Miss Mollie Charlton, Pekin	3 00
Second premium, Miss Anna Miller, Quincy	2 00

Table Scarf:	
First premium, Mrs. A. G. Stowell, Peoria	3 00
Second premium, Miss Eva Connell, Jacksonville	2 00

Lap Robe:	
First premium, Mrs. C. Hinsey, Pekin	3 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	2 00

Darned Net:	
First premium, Miss Mollie Charlton, Pekin	3 00
Second premium, Miss Maud Hinsey, Pekin	2 00

Embroidery—Machine:	
First premium, Domestic Sewing Machine Co., Chicago	3 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	2 00

Machine Tucking:	
First premium, Domestic Sewing Machine Co., Chicago	2 00
Second premium, Mrs. J. Nearing, Kenney	1 00

Machine Braiding:	
First premium, Domestic Sewing Machine Co., Chicago	2 00
Second premium, Mrs. J. F. Robinson, Atlanta	1 00

Machine Quilting.	
First premium, Domestic Sewing Machine Co., Chicago	2 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	1 00

Awarding Committee.—Miss Belle Call, Peoria; Miss Sallie Steckler, Peoria; Mrs. J. M. Tenery, Peoria.

LOT 110—FANCY WORK.

Honiton Lace:	
First premium, Mrs. C. Hinsey, Pekin	$3 00
Second premium, Mrs. L. H. Cheney, Peoria	2 00

Applique Lace:	
First premium, Mrs. A. S. Landon, Wheaton	3 00
Second premium, Miss Maud Hinsey, Pekin	2 00

Point Lace:	
First premium, Mrs. L. H. Cheney, Peoria	3 00
Second premium, Miss Maud Hinsey, Pekin	2 00

Lamp Mat:	
First premium, Mrs. Wm. Horton, Weston	2 00
Second premium, Miss Maud Hinsey, Pekin	1 00

Watch Case:	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	2 00
Second premium, Mrs. C. Hinsey, Pekin	1 00

Slipper Case:	
First premium, Miss M. O. Bestor, Peoria	2 00
Second premium, Mrs. T. S. Neal, Quincy	1 00

Card Receiver:	
First premium, Mrs. T. S. Neal, Quincy	2 00
Second premium, Miss Anna Miller, Quincy	1 00

Needle Case:	
First premium, Miss Alice M. Dodge, Peoria	2 00
Second premium, Miss M. O Bestor, Peoria	1 00

Comb Case:	
First premium, Miss Maud Hinsey, Pekin	2 00
Second premium, Miss Carrie A. Wilmes, Chicago	1 00

Tidy in Wool:	
First premium, Miss Anna Miller, Quincy	$3 00
Second premium, Miss Fannie Vaughan, Wheaton	2 00
Tidy in Cotton:	
First premium, Miss Hannah M. Heading, Peoria	3 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	2 00
Fancy Tidy, any Material:	
First premium, Mrs. J. B. Gault, Knoxville	3 00
Second premium, Miss Maud Hinsey, Pekin	2 00
Crochet Work, in Worsted:	
First premium, Miss L. Allen, Decatur	2 00
Second premium, Miss L. Allen, Decatur	1 00
Crochet Work, in Cotton:	
First premium, Miss Fannie Vaughan, Wheaton	2 00
Second premium, Mrs. W. B. Woodward, Peoria	1 00
Crochet Work, in Linen:	
First premium, Mrs. J. Nearing, Kenney	2 00
Second premium, Mrs. M. J. Campbell, Peoria	1 00
Pair Silk Mittens, knit	
First premium Mrs. J. F. Robinson, Atlanta	3 00
Second premium, Mrs. C. Hinsey, Pekin	2 00
Netting:	
First premium, Mrs. Cellie Keene, Atlanta	2 00
Second premium, Mrs. J. Nearing, Kenney	1 00
Toilet Cushion:	
First premium, Miss M. O. Bestor, Peoria	2 00
Second premium, Mrs. P D. Stagg, Greensburg, Ind	1 00
Work Basket:	
First premium, Mrs. C. Hinsey, Pekin	2 00
Second premium, Mrs. T. S. Neal, Quincy	1 00
Infant Basket:	
First premium, Mrs. C. Hinsey, Pekin	00
Scrap Basket:	
First premium, Miss Maud Hinsey, Pekin	2 00
Second premium, Mrs. M. J. Campbell, Peoria	1 00
Wash Stand Set:	
First premium, Mrs. J. Nearing, Kenney	2 00
Second premium, Miss Anna Miller, Quincy	1 00
Whisk Broom Holder:	
First premium, Mrs. Wm. Horton, Weston	2 00
Second premium, Mrs. J. Nearing, Kenney	1 00

Awarding Committee.—Mrs. John Buffington, Andalusia; Miss Bell Call, Peoria; Miss Sallie Steckler, Peoria.

LOT 111—NEEDLE WORK, ETC.

[By Girl under 14 years of age.]

Plain Sewing:	
First premium, Iva Robinson, Atlanta	$2 00
Second premium, Nona Crisler, New Point, Ind	1 00
Fine Shirt, unwashed:	
First premium, Elva Nearing, Kenney	2 00
Second premium, Lou Keene, Atlanta	1 00
Coarse Shirt, unbleached:	
First premium, Lou Keene, Atlanta	2 00
Second premium, Elva Nearing, Kenney	1 00
Plain Chemise:	
First premium, Lou Keene, Atlanta	2 00
Second premium, Iva Robinson, Atlanta	1 00
Hand-made Calico Dress:	
First premium, Lou Keene, Atlanta	2 00
Second premium, Lou Keene, Atlanta	1 00

Patch-work Quilt:	
First premium, Nona Crisler New Point, Ind	$2 00
Second premium, Nona Crisler, New Point, Ind	1 00
Darning and Repairing:	
First premium, Nona Crisler, New Point, Ind	2 00
Second premium, Lou Keene, Atlanta	1 00
Foot Mat, of rags:	
First premium, Katie Amsbury, Peoria	3 00
Second premium, Dora Veach, Quincy	2 00
Tidy, in wool:	
First premium, Elva Nearing, Kenney	2 00
Second premium, Iva Robinson, Atlanta	1 00
Tidy, in cotton:	
First premium, Iva Robinson, Atlanta	2 00
Second premium, Dora Veach, Quincy	1 00
Darned Net:	
First premium, Dora Veach, Quincy	2 00
Second premium, Lou Keene, Atlanta	1 00
Tatting:	
First premium, Elva Nearing, Kenney	2 00
Second premium, Nona Crisler, New Point, Ind	1 00
Crochet Work:	
First premium, Dora Veach, Quincy	2 0
Second premium, Nona Crisler, New Point, Ind	1 00
Card-board Work:	
First premium, Elva Nearing, Kenney	2 00
Second premium, Lou Keene, Atlanta	1 00
Lamp Mat:	
First premium, Nona Crisler, New Point, Ind	2 00
Second premium, Lou Keene, Atlanta	1 00
Comb Case:	
First premium, Lou Keene, Atlanta	2 00
Second premium, Dora Veach, Quincy	1 00
Needle Case:	
Second premium, Iva Robinson, Atlanta	1 00
Air Castle:	
First premium, Lou Keene, Atlanta	2 00
Pair of Men's Socks:	
First premium, Nona Crisler, New Point, Ind	2 00
Second premium, Lou Keene, Atlanta	1 00
Pair Ladies Stockings:	
First premium, Elva Nearing, Kenney	2 00
Second premium, Dora Veach, Quincy	1 00
Pair Mittens:	
First premium, Elva Nearing, Kenney	2 00
Second premium, Nona Crisler, New Point, Ind	1 00
Scarf:	
First premium, Elva Nearing, Kenney	2 00
Second premium, Nona Crisler, New Point, Ind	1 00
Hearth Rug:	
First premium, Nona Crisler, New Point, Ind	2 00

Awarding Committee.—Achsah Emerson, Toulon; Miss A. M. Prout, Toulon; Miss Belle Cliffe, Peoria.

LOT 112—QUILTS AND NEEDLE WORK.

Patch-work Calico Quilt:	
First premium, Mrs. J. L. Fash, Peoria	$4 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	2 00
Patch-work Silk Quilt:	
First premium, Mrs E. A. Wallace, Monmouth	8 00
Second premium, Miss Anna Miller, Quincy	4 00
White Quilt, Solid on Muslin:	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	4 00
Second premium, Mrs. J. Nearing, Kenney	2 00
Worsted Quilt:	
First premium, Mrs P. D. Stagg, Greensburg, Ind	4 00
Second Premium, Mrs. A. S. Landon, Wheaton	2 00
Domestic Counterpane:	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	4 00
Second premium, Mrs. H. G Kingman, Peoria	2 00
Crochet Counterpane:	
First premium, Mrs. J. Nearing, Kenney	4 00
Second premium, Miss Maud Hinsey, Pekin	2 00
Knit Counterpane:	
First premium, Mrs. R. J. Cline, Peoria	4 00
Second premium, Mrs. George Frederick, Peoria	2 00
Fine Night Dress:	
First premium, V. B. Becraft, Jacksonville	3 00
Second premium, Miss Alice M. Dodge, Peoria	2 00
Fine Skirt:	
First premium, Mrs. P. D. Stagg Greensburg, Ind	3 00
Second premium, Mrs. A. S. Landon, Wheaton	2 00
Fine Chemise:	
First premium, V. B. Becraft, Jacksonville	3 00
Second premium, Mrs. J. Nearing, Kenney	2 00

Awarding Committee—Mrs. E. Landrigan, Albion; Miss. M. O. Bestor, Peoria; Mrs. E. C. Skeavington, Albion; Mrs. J. J. Smith, Sandwich.

CLASS L—NATURAL HISTORY.

JOHN P. REYNOLDS, *Superintendent.*

LOT 113—TAXIDERMY, MINERALOGY AND CONCHOLOGY.

Collection of Minerals and Fossils:	
First premium, W. H. Chapman, Peoria	$50 00
Second premium, John Wolf, Canton	20 00
Collection of Illinois Birds and Mammals, 50 species, shown by the Taxidermist:	
First premium, John S. Barnhart, Canton	40 00
Second premium, Amelia L. Halsey, Lafayette	20 00
Collection illustrating the Conchology of Illinois, 100 species:	
First premium, John Wolf, Canton	20 00
Second premium, Henry O. Shepley, Canton	10 00
Display of Mound Relics:	
First premium, Wm. Marsters, Peoria	50 00
Second premium, C. Gove, Trivoli	20 00

Awarding Committee—S. A. Forbes, Normal; Fred. Brendel, Peoria; H. Lightner, Peoria; Mrs. W. H. Sexton, Monmouth.

LOT 114—ENTOMOLOGY, ETC.

Collection of Insects:	
First premium, Wm. Braddock, Springfield	$30 00
Second premium, Wm. Braddock, Springfield	15 00
Collection of Woods of Illinois, 75 varieties:	
First premium, Henry O. Shepley, Canton	20 00
Second premium, C. Gove, Trivoli	10 00
Collection representing the Botany of Illinois:	
First premium, Miss Helen Brendel, Peoria	20 00
Second premium, Miss Alice J. Heading, Peoria	10 00

* *Awarding Committee*—S. A. Forbes, Normal; Fred. Brendel, Peoria; H. Lightner, Peoria; Mrs. W. H. Sexton, Monmouth.

CLASS M—SPEED.

D. E. BEATY, *Superintendent.*

LOT 115—SPEED RINGS.

RUNNING RACE—STAKE $100.

Age, 2 and under 3 years; half-mile heats; best two in three -5 entries:	
First premium, Thos. G. Prickett, Springfield	$84 00
Robt Burns, by Barney Williams; dam, by Bill Alexander.	
Second premium, John Strauss, Peoria	42 00
Bay colt, Capitol; sire, Armus.	
Third premium, J. W. Benson, Danville	14 00
Sorrel, Markman, Jr.; dam, Peggy Rogers.	

Judges—Daniel Bates, Pittsfield; W Corbin, Quincy; J. E. McFerran, Louisville, Ky.

TROTTING STALLIONS—STAKE, $200.

Open to all that have made a season in 1882—5 entries:	
First premium, Wash. Corbin, Quincy	$180 00
Chesnut stallion, Corbin's Bashaw, by Amboy; dam, Black Maria, by Banner Chief.	
Second premium, M. O'Conner, Galesburg	90 00
Black, Col E. T. Baker; sire, Hill's Black Hawk; dam, Black Hawk mare.	
Third premium, A. M. Chapman, Litchfield	30 00
Black stallion, Black Douglas.	

TROTTING RACE—STAKE $200.

Age, two and under three years. Half mile heats, best two in three—4 entries:	
First premium, N. Buren, LaHarpe	$204 00
Brown stallion, Wildmont, by Egmont; dam, Advance, by Administrator.	
Second premium, J. C. McFerran & Son, Louisville, Ky.	68 00
Brown filley, Prefix, by Pancoast; dam, by Messenger Duroc.	
Third premium, Robt. Kirkpatrick, LaHarpe	34 00
Bay stallion, J. W. South, by Princeps; dam, by Melbourne, Jr.	

TROTTING RACE—STAKE $150.

Age, four and under five years—9 entries:	
First premium, James McKean, Bradford	$171 00
Bay stallion, McGregor Chief, by Robert McGregor; dam, Lady Mac.	
Second premium, J. H. Stout, Carrollton	85 50
Gray mare, Kitty Kilburn, by Kilburn Jim, Jr.; dam, by Honest John.	
Third premium, Caton Stock Farm, Joliet	28 50
Bay mare, Line Blue, by Blue Bull; dam, Miss Davidson, by Pocahontas Boy.	

TROTTING RACE—STAKE $150.

Age, three and under 4 years. Mile heats, best two in three—4 entries:

First premium, J. C. McFerran & Son, Louisville, Ky.	$126 00
Bay filly, Agath, by Cuyler; dam, by Harold.	
Second premium, W. G. King, Carrollton	63 00
Brown mare, Lady Leonard, by Peter Leonard.	
Third premium, Geo. J. Castle, Carlinville	21 00
Bay stallion, Mambrino Dick, by Mambrino Time; dam, Scottish Maid, by Bonnie Scotland.	

TROTTING RACE—STAKE $150.

Age, five and under six years—5 entries:

First premium, John Fry, Chicago	$135 00
Iron gray gelding, John F., by Deucalion.	
Second premium, N. Buren, LaHarpe	67 50
Chestnut mare, Lelia S., by Sweepstakes; dam, by Martin's Silverheel.	
Third premium, J. H. Stout, Carrollton	22 50
Bay stallion, P. T. Barnum, by Thunderbolt; dam, by Capt. Walker.	

RUNNING RACE—STAKE $150.

Age, three and under four years, mile heats, best two in three—4 entries:

First premium, Wm. Brady, Peoria	$126 00
Bay gelding, Little Joker, by Amadis; dam, Ella Hawkins.	
Second premium, Wm. Brady, Peoria	63 00
Bay gelding, Willie B., by Amadis; dam, Lady Washington.	
Third premium, Thos. Young, Springfield	21 00
Bay horse, Viron, by Voltigeur; dam, by Red Horse.	

CLASS N—EDUCATION.

EMORY COBB, *Superintendent.*

LOT 116—GRADED SCHOOL EXHIBIT.

First year work		
First premium, Second District, Peoria	Diploma and	$4 00
Second premium, Lake View, No. 1		2 00
Second year work		
First premium, Palmer School, Springfield	Diploma and	4 00
Second premium, Second District, Peoria		2 00
Third year work:		
First premium, Oakland	Diploma and	4 00
Second premium, Second District, Peoria		2 00
Fourth year work:		
First premium, Oakland	Diploma and	4 00
Second premium, Fourth Ward, Springfield		2 00
Fifth year work:		
First premium, Oakland	Diploma and	4 00
Second premium, Second District, Peoria		2 00
Sixth year work:		
First premium, Lake View, No. 2	Diploma and	4 00
Second premium, Oakland		2 00
Seventh year work:		
First premium, Lake View, No. 2	Diploma and	4 00
Second premium, Palmer School, Springfield		2 00
Eighth year work:		
First premium, Lake View, No. 2	Diploma and	4 00
Second premium, Oakland		2 00

Awarding Committee—H. N. Hallock, Brimfield; Frank Mathews, Pekin.

LOT 117—SWEEPSTAKES, GRADED SCHOOL EXHIBIT.

Exhibit by one school, 1st grade to 8th, inclusive:

First premium, Oakland	Diploma and	$10 00
Second premium, Lake View, No. 2		5 00
Third premium, Palmer School, Springfield		2 50

Set of three papers, one page each of writing, from as many pupils of the same school:

First premium, Oakland	Diploma and	10 00
Second premium Oak Park		5 00
Third premium, East Side, Joliet		2 50

To the Superintendent of Schools of the town or city making the best exhibit of work entered for premiums in Lot 116, and premiums 1165 and 1167 in Lot 117:

Premium, Chas. I. Parker, Oakland	Diploma

Awarding Committee—H. N. Hallock, Brimfield; Frank Mathews, Pekin.

LOT 118—COUNTRY SCHOOLS.

Spelling, older pupils:

First premium, Dist. No. 3, Medina Township, Peoria Co	Diploma and	$4 00
Second premium, Dist. No. 5, Frankfort Township, Will Co		2 00

Spelling, younger pupils:

First premium, Dist. No. 5, Frankfort Township, Will Co	Diploma and	4 00
Second premium, Dist. No. 4, T. 1 N., 7 W., St. Clair Co		2 00

Business Forms, older pupils:

First premium, Dist. No. 3, Medina Township, Peoria Co	Diploma and	4 00
Second premium, Dist. No. 2, Crete Township, Will Co		2 00

Letters, younger pupils:

First premium, Dist. No. 4, T. 1 N., R. 7 W., St. Clair Co	Diploma and	4 00
Second premium, Dist. No. 5, Township 11, Union Co		2 00

Arithmetic, older pupils:

First premium, Dist. No. 3, Medina Township, Peoria Co	Diploma and	4 00
Second premium, Dist. No. 5, Frankfort Township, Will Co		2 00

Arithmetic, younger pupils:

First premium, Dist. No. 1, Bloom Township, Cook Co	Diploma and	4 00
Second premium, Dist. No. 8, Rosefield Township, Peoria Co		2 00

Common Things, older pupils:

First premium, Dist. 10, Barrington Township, Cook Co	Diploma and	4 00
Second premium, Dist. No. 3, Medina Township, Peoria Co		2 00

Common Things, younger pupils;

First premium, Dist. No. 4, Evanston Township, Cook Co	Diploma and	4 00
Second premium, Dist. No. 6, Winfield Township, DuPage Co		2 00

Geography and History, older pupils:

First premium, Dist. No. 5, Frankfort Township, Will Co	Diploma and	4 00
Second premium, Dist. No. 3, Medina Township, Peoria Co		2 00

Geography, younger pupils:

First premium, Dist. No. 7, Akron Township, Peoria Co	Diploma and	4 00
Second premium, Dist. No. 5, Frankfort Township, Will Co		2 00

Language, older pupils:

First premium, Dist. No. 3, Medina Township, Peoria Co	Diploma and	4 00
Second premium, Dist. No. 5, Frankfort Township, Will Co		2 00

Language, younger pupils:

First premium, Dist. No. 10, Barrington Township, Cook Co	Diploma and	4 00
Second premium, Dist. No. 8, Florence Township, Stephenson Co		2 00

Botany:

First premium, Dist. 4, T. 3 S., R. 6 W., St. Clair Co	Diploma and	4 00

Physiology:

First premium, Dist. 4, T. 3 S., R. 6 W., St. Clair Co	Diploma and	4 00
Second premium, Dist. No. 1, New Lenox Township, Will Co		2 00

Natural Philosophy:

First premium, Dist. No. 4, T. 3 S., R. 6 W., St. Clair Co	Diploma and	4 00

Zoölogy:

First premium, Dist. No. 4, T. 3 S., R. 6 W., St. Clair Co	Diploma and	4 00

Awarding Committee—B. C. Allensworth, Minier; Amelia L. Halsey, LaFayette; John Trainer, Decatur.

LOT 119—SWEEPSTAKES, COUNTRY SCHOOL EXHIBIT.

Exhibit by one school of all the work for which premiums 1170-1181, inclusive, are offered, under Lot 118.
First premium, Dist. No. 3, Medina Township, Peoria Co.............Diploma and $10 00

Second premium, Dist. No. 5, Frankfort Township, Will Co.......................... 5 00
Third premium, Dist. No. 4, T. 2 S., R. 7 W., St. Clair Co.......................... 2 50

Set of three papers, one page each, of writing, from as many pupils of one school:
First premium, Dist. No. 3, Medina Township, Peoria Co............Diploma and $10 00
Second premium, Dist. No. 5, New Trier Township, Cook Co....................... 5 00
Third premium, Dist. No. 3, Calumet Township, Cook Co...... .... 2 50

To the County Superintendent of Schools of the county making the best exhibit of work entered for premiums in Lot 118, and premiums 1186 and 1187, in Lot 119;
Premium, J. E. Pillsbury, Peoria..Diploma

Awarding Committee—B. C. Allensworth, Minier; Amelia L. Halsey, LaFayette; John Trainer, Decatur,

LOT 120—HIGH SCHOOL EXHIBIT.

LANGUAGES.

Three papers in Latin, from pupils who have pursued the study not more than one school year, the work consisting of translation of two fables, with appropriate questions on Orthography, Etymology and Syntax:
First premium, Lake View.. ...Diploma and $4 00
Second premium, Hyde Park 2 00

Three papers in Latin, the work consisting of translation of about two manuscript pages, from the first 1200 lines of Virgil's Æneid, with appropriate questions in Etymology, Syntax and Prosody, including the scansion of two lines:
First premium, Lake View......................... ....Diploma and 4 00
Second premium, Oakland... 2 00

Three papers in Greek, the work consisting, principally, of questions in Etymology and Syntax, with translation of ten simple sentences, Greek into English, from the first fifty lessons of White's First Lesson in Greek, the work from the first year pupils in Greek:
First premium, Lake View. .... Diploma and 4 00
Second premium, Evanston 2 00

Three papers in German, the work consisting of translation of about two manuscript pages from Schiller's "Maid of Orleans," and translation from English to German of at least one-half manuscript page, taken from the ninth, twelfth, thirteenth, fourteenth or sixteenth lessons of Appleton's Third Reader:
First premium, Lake View ....Diploma and 4 00
Second premium, Hyde Park........... .... 2 00

MATHEMATICS.

Three papers, Elementary Algebra, including work through Quadratics:
First premium, Lake View.. ....Diploma and 4 00
Second premium, Lanark.......................... .. .. 2 00

Three papers, Plane Geometry:
First premium, Lake View..Diploma and 4 00
Second premium, Moline... 2 00

SCIENCE.

Three papers, Physiology:
First premium, Lake View..Diploma and 4 00
Second premium, Evanston 2 00

Three papers, Astronomy:
First premium, Lake View..Diploma and 4 00
Second premium, Evanston... 2 00

Three papers, Natural Philosophy:
First premium, Lake View..Diploma and 4 00
Second premium, Hyde Park... 2 00

ENGLISH LITERATURE.

Three papers in English Literature, accompanied by three essays, written during the year, germain to the subject:

First premium, Lake View	Diploma and	[illegible]
Second premium, Evanston		[illegible]

ESSAY WRITING.

Three Essays, on miscellaneous subjects, prepared by pupils, in connection with regular work of the school:

First premium, Lake View	Diploma and	[illegible]
Second premium, Evanston		[illegible]

CIVIL GOVERNMENT.

Three papers on Civil Government:

First premium, Danville	Diploma and	[illegible]
Second premium, Lanark		[illegible]

Awarding Committee—Chas. E. Smith, Peoria; J. G. Loquist, Peoria; J. E. Pillsbury, Peoria.

LOT 121—SWEEPSTAKES.

To the High School whose papers, in six or more of the foregoing subjects, said subjects to be designated when the papers are sent, received the highest general average mark:

First premium, Lake View	Diploma and	$10 00
Second premium, Oakland		5 00

To the High School whose papers, in ten of the above named studies, received the highest average mark:

First premium, Lake View	Diploma and	10 00

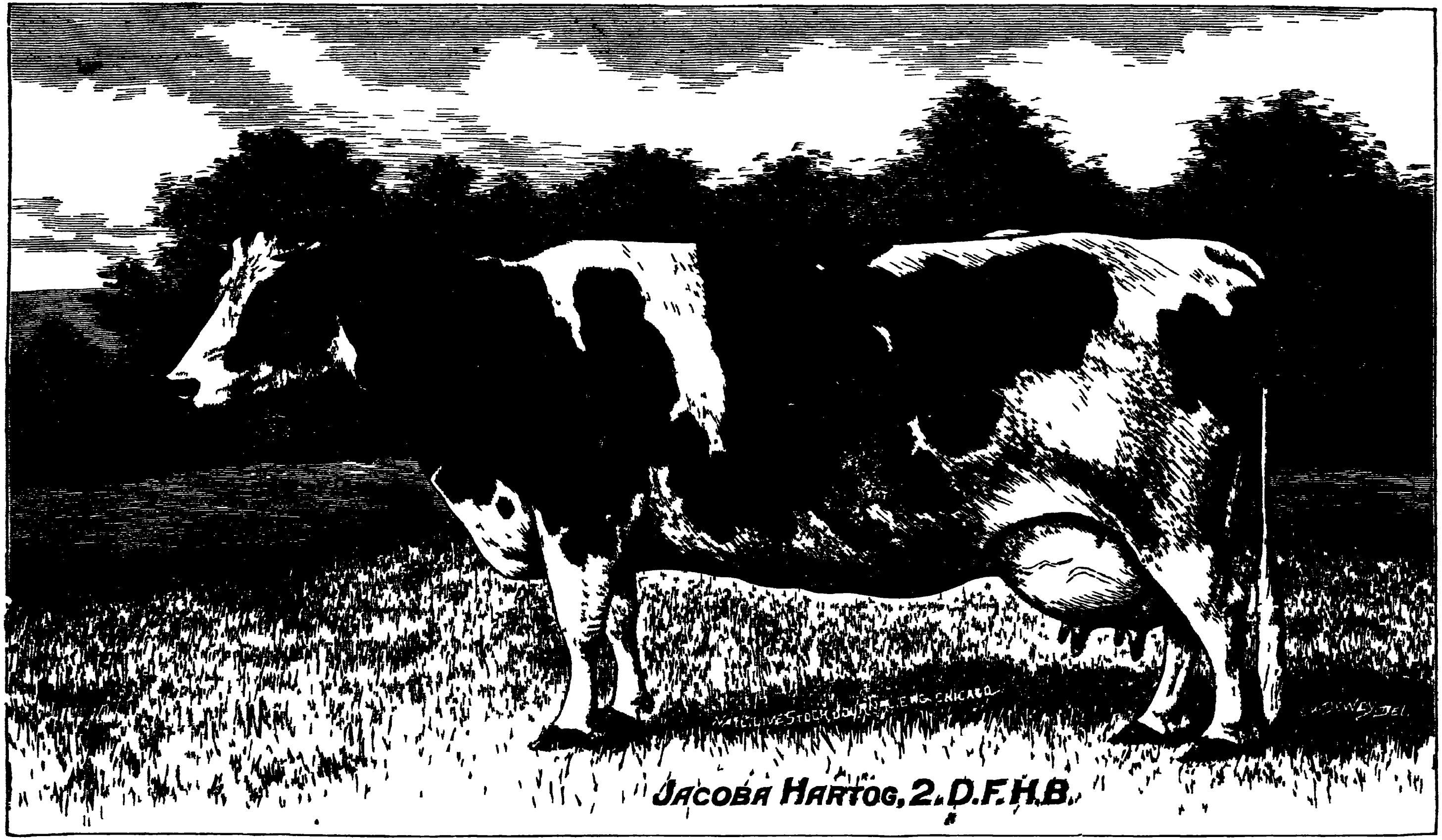
Five Drawings, from as many pupils of one school:

First premium, Forestville	Diploma and	10 00
Second premium, Oakland		5 00
Third premium, Edwards School, Springfield		2 00

Book-keeping, from three pupils of one school:

First premium, Bloomington High School	Diploma and	10 00

Awarding Committee—Chas. E. Smith, Peoria; J. G. Loquist, Peoria; J. E. Pillsbury, Peoria.


JACOBA HARTOG, 2. D.F.H.B.

Holstein Cow, Jacoba Hartog 2, D F. H B , exhibited by the Unadilla Valley Stock Breeders Association West Edmeston, N Y Awarded Sweepstakes Premium. State Fair. 1882 —p 69.

MEETINGS DURING THE FAT STOCK SHOW.

Exposition Building,
Chicago November 16, 1882—10 o'clock A. M.

Board met on call of the President.

Present: President Scott, Vice-Presidents Reynolds, Moore, Dysart, Snoad, Vittum, Beaty, Gore and Landrigan.

Motion of Mr. Vittum carried,

That superintendents of the several departments proceed to make awards at 9 o'clock A. M. to-morrow.

Motion of Mr. Reynolds carried,

That the values of articles of food named in the statements of parties competing in rings for cost of production, be not considered by the committee appointed to make such awards.

Motion of Mr. Dysart carried,

That committees, except in sweepstakes rings, consist of one feeder and two butchers.

Motion of Mr. Landrigan carried,

That the superintendents of departments, with the President, be authorized to select committees for their respective classes from the judges appointed.

On motion of Mr. Moore,

The Board adjourned, subject to the call of the President.

AFTERNOON SESSION.

Exposition Building,
November 16, 1882—3 o'clock P. M.

Board met on call of the President.

Present: President Scott, Vice-Presidents Reynolds, Moore, Gore, Funk, Beaty and Vittum.

The following judges were reported as present:

Hon. R. Baker	Elyria, Ohio	Feeder
Hon. B. F. Funk	Bloomington, Ill	Feeder
Walter S. Stebbins	Iowa City, Iowa	Butcher
Boone Kershaw	Grayville, Ill	Feeder
Ira Butterfield	Port Huron, Mich	Feeder
A. B. Trostle	Franklin Grove, Ill	Butcher

G. F. Frankland	Toronto, Can.	Butcher
A J. Roy	Kankakee, Ill	Butcher
Abraham Wolf	Fort Wayne, Ind.	Butcher
Theodore Wilson	Whitehall, Ill	Feeder
W H. Leonard	Evansville, Ind	Butcher
John Spinning	Bloomington, Ill	Butcher
A. A. Arnold	Galesville, Wis	Feeder
L. S. Baldwin	Whitehall, Ill	Feeder

The Board, in open meeting, examined each butcher as to the number of years of practical experience had as a butcher in killing and cutting up on the block the various breeds of stock on exhibition, prejudices if any in favor of the various breeds of stock, either as a breeder or otherwise, and other essential matters likely to determine his ability to critically pass upon the respective merits of the several breeds of animals on exhibition.

On motion of Mr. Beaty,
The Board adjourned, subject to the call of the President.

EXPOSITION BUILDING,
NOVEMBER 17, 1882—10 A. M.

Board met on call of President.

Present: President Scott, Vice-Presidents Reynolds, Moore, Dysart, David, Beaty, Funk and Gore.

Motion of Mr. David carried,
That committees be appointed to pass upon pure-bred cattle, sheep and swine.

Committees were appointed as follows:

SHORTHORN AND HEREFORD CATTLE.

R. Baker	Elyria	Ohio
W. Stebbins	Iowa City	Iowa
A. S. Trostle	Franklin Grove	Illinois

LONG, MIDDLE, AND FINE WOOL SHEEP.

G. F. Frankland	Toronto	Canada
L. S. Baldwin,	Whitehall	Illinois
John Spinning	Bloomington	Illinois

BERKSHIRE, POLAND CHINA, CHESTER WHITE, VICTORIA AND ESSEX.

W. W. Leonard	Evansville	Indiana
Boone Kershaw	Grayville	Illinois
A. J. Roy	Kankakee	Illinois

Motion of Mr. Reynolds carried
That the Secretary be instructed to have four thousand copies of the catalogue of the show printed.

On motion of Mr. Gore,
The Board adjourned, subject to the call of the President.

EXPOSITION BUILDING, November 18, 1882—10 A. M.

Board met on call of the President.

Present: President Scott, ex-President Gillham, Vice Presidents Moore, Dysart, Vittum, David, Beaty, Funk, Voorhies, Washburn and Landrigan.

Committees were then selected to make awards in class A, Cattle, C, Sheep, and D, Swine.

Motion of Mr. Gillham carried,

That a committee be appointed by the President, from the judges nominated from other States, to make awards on rings for cost of production.

The President appointed as said committee, R. Baker, of Ohio; Abraham Wolf, of Indiana, and Ira Butterfield, of Michigan.

Motion of Mr. Gillham carried,

That the President appoint a committee of three members of the Board to prepare for the guidance of the committee appointed to make awards in the rings for cost of production, a schedule of prices of articles of forage, grain, etc., entering into the statements of parties competing in the rings for premiums offered for cost of production.

The President appointed as said committee, Messrs. Gillham, Reynolds and Beaty.

Motion of Mr. Funk carried,

That the cattle entered in the rings for the premiums offered for dressed carcass, be slaughtered on Tuesday, November 21, at 2 o'clock P. M.

Motion of Mr. Vittum carried,

That the President appoint a person to represent the Board in a suit of damages in the city of Peoria.

The President appointed D. W. Vittum as such person.

On motion of Mr. Voorhies,

The Board adjourned, subject to the call of the President.

EXPOSITION BUILDING, November 23, 1882—10 A. M.

Board met on call of the President.

Present: President Scott, Vice Presidents Emery, Reynolds, Moore, Dysart, Snoad, David, Beaty, Funk, Gore and Landrigan.

Minutes of all the meetings held since the opening of the Show were read and adopted.

The following report was adopted, on motion of Mr. Snoad:

To the State Board of Agriculture

Your committee, to whom was referred the matter of fixing a standard of prices for the various articles of food named in the statements of applicants competing in the rings for "cost of production," beg leave to report that they find a great diversity of articles of food used by the feeders contesting for the premiums offered by the Board.

There are not any two of the feeders competing for these premiums that have used the same articles of food, or pursued the same course of feeding.

The committee have not named the market prices of grain, forage, etc., named by the exhibiters in their statements, but have made a fair average for a term of three years, which will enable the committee appointed to determine the awards in the rings for cost of production, to proceed on an equitable basis.

The value of calf at birth, pasturage consumed, and expense for care from year to year to be the same in each case.

This method places each exhibiter on the same basis, and the amount of food consumed, rather than the price, determines the cost of production.

The committee recommend that prices be fixed as follows on the articles of food entering into the cost of production, and named in the statements of applicants for these premiums:

Shelled corn,	per	100 lbs	75
Corn ground,	"	"	80
Corn on ear,	"	"	50
Clover hay,	"	"	27
Timothy hay,	"	"	37
Clover & timothy	"	"	40
Oat chaff,	"	"	50
Oil cake,	"	"	$1 50
Oil meal,	"	"	1 33
Bran,	"	"	60
Peas, boiled,	"	"	1 00
Oats ground,	"	"	96
Turnips,	"	"	10
New milk,	"	gal	04½
Skim milk,	"		01½
Value of calf at birth			5 00
Expense for care up to 12 months			5 00
Expense for care from 12 to 24 months			5 00
Expense for care from 24 to 36 months			5 00
Pasture for first 12 months			1 75
Pasture from 12 to 24 months of age			2 46
Pasture from 24 to 36 months of age			6 50

The estimate for pasturage is made on the supposition that the animals are on full grain feed.

The above schedule is made to cover the average of prices for the last three years, and is mainly based upon the prices stated by exhibiters in their applications for entry.

Respectfully submitted,

D. B. GILLHAM,
D. E. BEATY,
JOHN P. REYNOLDS.

Motion of Mr. Dysart carried,

That the five committeemen retained to award the prizes on dressed carcasses, be paid $3.00 each as compensation for extra time.

Motion of Mr. Reynolds carried,

That D. M. Moninger, of Galvin, Iowa, be requested to appear before the Board and give evidence concerning the age of a certain steer, entered in the ring for animals one and under two years.

Mr. Moninger appeared before the Board and made a satisfactory statement as to the date of birth of the steer in question.

On motion of Mr. Gore,

The Board adjourned, subject to the call of the President.

JAMES R. SCOTT, President.

S. D. FISHER, Secretary.

REPORT

OF THE

FIFTH ANNUAL

FAT STOCK SHOW,

HELD BY THE

Illinois State Board of Agriculture,

IN THE

EXPOSITION BUILDING, CHICAGO,

NOVEMBER 16 23, 1882.

Illinois State Board of Agriculture,

For 1881-82.

President	J. R. SCOTT	Champaign
Ex-President	D. B. GILLHAM	Upper Alton
Secretary	S. D FISHER	Springfield
Treasurer	JOHN W. BUNN	Springfield
Assistant Secretary	CHARLES F. MILLS	Springfield

VICE-PRESIDENTS.

1st Dist.	Lewis Ellsworth	Naperville
2d "	H D Emery	Chicago
3d "	John P. Reynolds	Chicago
4th "	George S. Haskell	Rockford
5th "	J. L. Moore	Polo
6th "	Saml Dysart	Franklin Grove
7th "	Charles Snoad	Joliet
8th "	Emory Cobb	Kankakee
9th "	D. W. Vittum, Jr.	Canton
10th "	E. B. David	Aledo
11th Dist.	David E. Beaty	Jerseyville
12th	J. W. Judy	Tallula
13th	Wm. M. Smith	Lexington
14th	Wm. Voorhies, Jr.	Voorhies
15th	E. H. Bishop	Effingham
16th	B. Pullen	Centralia
17th	David Gore	Carlinville
18th	J. M. Washburn	Carterville
19th	John Landrigan	Albion

SUPERINTENDENT OF DEPARTMENTS, ETC.

Class A—Cattle	Mr. Smith
Class B—Horses	Mr. Beaty
Class C—Sheep	Mr. David
Class D—Swine	Mr. Gore
Class E—Poultry	Mr. Emery
Class F—Mechanics	Messrs. Voorhies and Pullen
Marshal of the Ring	Mr. Judy
General Superintendent	Mr. Vittum
Superintendent of Forage and Stalls	Mr. Moore
Superintendent of Press Department	Mr. Ellsworth

COMMITTEES.

Reception Committee	Messrs. Scott, Gillham, Reynolds, Ellsworth and Cobb
Auditing Committee	Messrs. Snoad, Dysart and Landrigan
Committee of Arrangements	Messrs. Scott, Gillham, Ellsworth, Beaty, Cobb, Dysart, Smith, Pullen, Landrigan, Haskell, Vittum, and Moore
Committee on Printing	Messrs. Scott, Reynolds, Moore and Fisher
Committee on Finance	Messrs. Cobb, Vittum, Smith and Beaty
Committee on Transportation	Messrs. Scott, Gillham, Cobb, Vittum, Smith and Fisher
Committee on Fat Stock Show	Messrs. Scott, Gillham, Cobb, Smith, Vittum, Dysart and Moore.

EXHIBITERS.

CLASS A—CATTLE.

The figures denote the entries of each exhibiter.)

SHORTHORNS—20 head.

Canada West Farm Stock Association Brantford, Can	8,13
Cobb and Phillips, Kankakee	6,7
Croft, S. & Bro., Wenona	10
Dodge, C. & Son, New South Lyme, O	3,4,8,9,90
Grant, David, Petersburg	11
Gillett, John D., Elkhart	15
Groff, H. & I., Elmira, Ca	1
Prather, S. E., Springfield	14
Pickrell, Thomas & Smith, Harristown	9
Potts, J. H., & Son, Jacksonville	2,12
Sherman, John B., Chicago	5,139,140
Winslow, A. M., & Sons, Kankakee	16

HEREFORD—7 head.

Crane, A. A., & Son, Osco	19,21
Cochrane, M. H., Compton, Quebec	17
Earl & Stuart, Lafayette, Ind	18
Fowler & Van Natta, Fowler, Ind	22
Miller, T. L. Co. Beecher	20,23

GRADES OR CROSSES—115 head.

Blanchard, C. L., Morenci, Mich	74
Burleigh, G. S., Mechanicsville, Iowa	24,25,142
Crane, A. A., & Son, Osco	70,71
Culbertson, C. M., Chicago	33,57,75,135,136
Dodge, C., & Son, New South Lyme, Ohio	84
Foster, Thomas, Flint, Mich	34,35
Fowler & Van Natta, Fowler, Ind	67,68,69
Gillett, John D., Elkhart	36,37,38,39,40,41,42,43,44,45,46,58,59,60,61,77,78,79,80,86,87,88,99,100 101,102,103,116,117,118,119,120,121,127,128,129,130,131,132,133,134,137
Groff, H. & I., Elmira, Ca	26,52
Miller, T. L., Co., Beecher	27,28,62,63,64,65,66,81,82,83,104,105 106,107,108,109,122,123,124,125,126
Moninger, D. M., Galvin, Iowa	30,31,32,53,54,55,56,76,85,94,95,96,97,98,110,111,112,113,114,115
Norris, H., & Sons, Aurora	50,51
Potts, J. H., & Son, Jacksonville	29,47,72
Sherman, John B., Chicago	91,92,138
Stone & Loake, Stonington	73
Varner, Allen, Indianola	141
Varnum, H. B., Marshalltown, Iowa	93
Welsh, George B, Tallula	48,49

CLASS B—HORSES.

ENGLISH SHIRE—11 head.

Truman, J. H., Chicago	143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153

CLASS C—SHEEP.

COTSWOLD—18 head.

Brown, J. A., & Son, Decatur	154, 155, 156, 162, 163, 168, 171
Hood, M. N., Guelph, Ca	232
Newton, Mrs. Anna, Pontiac, Mich	158, 164, 234
Willson, Frank, Jackson, Mich	157, 165, 173, 174, 176, 177, 233

LEICESTER—6 head.

Hood, M. F., Guelph. Ca	159, 160, 161, 166, 167, 170

LINCOLNSHIRE—3 head.

Newton, Mrs. Anna, Pontiac, Mich	169, 172, 175

SOUTHDOWN—10 head.

Potts, J. H., & Son, Jacksonville	178, 179, 180, 184, 185, 186, 188, 189, 190
Willson, Frank, Jackson, Mich	193

SHROPSHIRE—38 head.

Morgan & Cotton, Rockford	182, 183, 194, 195, 230
Newton, Mrs. Anna, Pontiac, Mich	181, 187, 191, 192, 201, 235, 236, 237, 238, 239, 240 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251 252, 253, 254, 255, 256, 257, 258, 259, 260, 261
Waddell, B., Marion, Ohio	231

OXFORD—5 head.

Stone & Loake, Stonington	196, 197, 198, 199, 200

MERINO—6 head.

Peck, E., & Son, Geneva	202, 203, 206, 207
Taylor Bros., Waynesville	204, 205

GRADES OR CROSSES—22 head.

Hood, M. N., Guelph, Ca	211, 212, 214, 215, 216, 217, 218, 219, 221, 222, 224, 225, 226, 227, 228, 229
Waddell, B., Marion, Ohio	208, 209, 210
Willson, Frank, Jackson, Mich	213, 220, 223

CLASS D—SWINE.

BERKSHIRE—8 head.

Taylor Bros., Waynesville	262, 263, 264, 265, 266, 267, 268, 342

POLAND-CHINA—26 head.

Countryman. J. A., Rochelle	269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 282, 283, 284, 285, 286, 287 288, 292, 293, 294
Davis, Henry, Dyer, Ind	289
Taylor Bros., Waynesville	280, 281, 290, 291

ESSEX—14 head.

Taylor Bros., Waynesville	310, 311, 314, 315, 318, 319, 320, 321
Willson, Frank, Jackson, Mich	312, 313, 316, 317, 322, 323

CHESTER WHITE—9 head.

Brown, J. A. & Son, Decatur	295, 299, 303, 307
Taylor Bros., Waynesville	298, 305, 306, 309, 343

VICTORIA—7 head,

Scheidt & Davis, Dyer, Ind	296, 297, 300, 301, 302, 304, 308

JERSEY RED, OR DUROC—18 head.

Bennett, Thomas, Rossville	327, 328, 329, 333, 334, 335
Miller, Phil D. & Sons, Panora, Iowa	337
Stoner, G W., La Place	338, 339, 340, 341, 344, 345, 346, 347, 348, 349, 350

GRADES OR CROSSES—7 head.

Scheidt & Davis, Dyer, Ind	324, 325, 332
Taylor Bros., Waynesville	326, 330, 331, 336

AWARDING COMMITTEES.

QUALIFICATION OF JUDGES.

The State Board of Agriculture, after using all diligence and care in the selection of judges, thoroughly investigated in open meeting the qualifications of each committeeman, as to the number of years of practical experience had as a butcher; in killing and cutting up on the block; the various breeds of stock on exhibition; the prejudices, if any, of judges in favor of any of the various breeds of meat animals, either as a breeder or otherwise, were developed. All essential matters likely to determine the ability of judges to critically and impartially pass upon the merits of the animals on exhibition, duly considered.

CLASS A—CATTLE.

LOT 1—SHORTHORN.

Name.	Residence.	State.
R. Baker	Elgin	Ohio
W. S. Stebbins	Iowa City	Iowa
A. S. Trostle	Franklin Grove	Illinois

LOT 2—HEREFORD.

R. Baker	Elgin	Ohio
A. S. Trostle	Franklin Grove	Illinois
W. S. Stebbins	Iowa City	Iowa

LOT 3—DEVON.

No entries.

LOT 4—OTHER PURE BEEF BREEDS.

No entries.

LOT 5—GRADES OR CROSSES.

W. R. Leonard	Evansville	Indiana
J. H. Butterfield	Port Huron	Illinois
L. S. Baldwin	Whitehall	Illinois
A. J. Roy	Kankakee	Illinois
A. Wolf	Fort Wayne	Indiana

LOT 6—SWEEPSTAKES RINGS.

Name.	Residence.	State.
B. F. Funk	Bloomington	Illinois
Theodore Wilson	Dixon	Illinois
J. Spinning	Bloomington	Illinois
W. S. Stebbins	Iowa City	Iowa
A. S. Trostle	Franklin Grove	Illinois

LOT 7—GRAND SWEEPSTAKES.

A. Wolf	Fort Wayne	Indiana
W. R. Leonard	Evansville	Indiana
G. Wright	Table Grove	Illinois
G. F. Frankland	Toronto	Canada
Alec A. Arnold	Galesville	Wisconsin

LOT 8—CAR-LOADS.

B. F. Funk	Bloomington	Illinois
Theodore Wilson	Dixon	Illinois
A. S. Trostle	Franklin Grove	Illinois
W. S. Stebbins	Iowa City	Iowa
J. Spinning	Bloomington	Illinois

LOT 9—DRESSED CARCASS.

W. R. Leonard	Evansville	Indiana
J. Spinning	Bloomington	Illinois
A. S. Trostle	Franklin Grove	Illinois

LOT 10—DRESSED CARCASS—SWEEPSTAKES.

W. R. Leonard	Evansville	Indiana
J. Spinning	Bloomington	Illinois
A. S. Trostle	Franklin Grove	Illinois
J. G. Imboden	Decatur	Illinois
A. Wolf	Fort Wayne	Indiana

CLASS C—SHEEP.

LOT 15—LONG WOOLS.

G. F. Frankland	Toronto	Canada
J. Spinning	Bloomington	Illinois
L. S. Baldwin	Whitehall	Illinois

LOT 16—MIDDLE WOOLS.

J. Spinning	Bloomington	Illinois
G. F. Frankland	Toronto	Canada
L. S. Baldwin	Whitehall	Illinois

LOT 17—FINE WOOLS.

J. Spinning	Bloomington	Illinois
G. F. Frankland	Toronto	Canada

LOT 18—GRADES OR CROSSES.

J. Spinning	Bloomington	Illinois
G. F. Frankland	Toronto	Canada

LOT 19—SWEEPSTAKES.

W. S. Stebbins	Iowa City	Iowa
A. S. Trostle	Franklin Grove	Illinois
Boone Kershaw	Grayville	Illinois

Lot 20—GRAND SWEEPSTAKES.

Name.	Residence.	State.
Theodore Wilson	Dixon	Illinois
W. R. Leonard	Evansville	Indiana
A. Wolf	Fort Wayne	Indiana

Lot 22—CAR LOADS.

J. Spinning	Bloomington	Illinois
G. F. Frankland	Toronto	Canada

Lot 23—DRESSED CARCASS.

No entries.

CLASS D—SWINE.

Lot 24—BERKSHIRE.

A. J. Roy	Kankakee	Illinois
Boone Kershaw	Grayville	Illinois
W. R. Leonard	Evansville	Indiana

Lot 25—POLAND CHINA.

A. J. Roy	Kankakee	Illinois
W. R. Leonard	Evansville	Indiana
Boone Kershaw	Grayville	Illinois

Lot 26—CHESTER WHITE AND VICTORIAS.

A. J. Roy	Kankakee	Illinois
W. R. Leonard	Evansville	Indiana
Boone Kershaw	Grayville	Illinois

Lot 27—ESSEX.

W. S. Stebbins	Iowa City	Iowa
A. S. Trostle	Franklin Grove	Illinois
Boone Kershaw	Grayville	Illinois

Lot 28—GRADES OR CROSSES.

Boone Kershaw	Grayville	Illinois
A. S. Trostle	Franklin Grove	Illinois
W. S. Stebbins	Iowa City	Iowa

Lot 29—SWEEPSTAKES.

B. F. Funk	Bloomington	Illinois
J. Spinning	Bloomington	Illinois
Theodore Wilson	Dixon	Illinois

Lot 30—GRAND SWEEPSTAKES.

B. F. Funk	Bloomington	Illinois
J. Spinning	Bloomington	Illinois
Theodore Wilson	Dixon	Illinois

LOT 32—FAT BAFROWS.

Name.	Residence.	State.
A. A. Arnold	Galesville	Wisconsin
G. Wright	Table Grove	Illinois
G. Elliott	Harristown	Illinois

LOT 33—DRESSED CARCASS.

W. R. Leonard	Evansville	Indiana
J. Spinning	Bloomington	Illinois
A. S. Trostle	Franklin Grove	Illinois

CLASS E—POULTRY.

Alonzo Snider	Chicago	Illinois
G. K. Barrere	Canton	Illinois
J. B. Foot	Norwood Park	Illinois
Burleigh Dunlap	Dunlap	Illinois
James Dickson	Chicago	Illinois
W. R. Bailey	Evanston	Illinois

COMMITTEE ON MEASUREMENTS.

CLASS A—CATTLE.

A. F. Moore	Polo	Illinois
S. B. Gillham	Alton	Illinois
W. C. Tuell	Canton	Illinois

CLASS D—SWINE.

T. H. Glenn	Chicago	Illinois
G. K. Barrere	Chicago	Illinois

BREEDING OF ANIMALS EXHIBITED.

CLASS A—CATTLE.

W. M. SMITH, *Superintendent.*

LOT 1—SHORTHORNS—THOROUGHBRED.

Steer or Spayed Heifer, 3 and under 4 years old—5 entries.

1—King of the West, exhibited by H. & I. Groff, Elmira, Can; bred by John I. Hicks, Mitchell, Can.; dropped April 19, 1879; sire, Newton Brook (5758); dam, Lady Wilde (266). Vol. 6.

2—Dwight, exhibited by J. H. Potts & Son, Jacksonville: bred by N. D. Graves, Jacksonville; dropped April 25, 1879; sire, Master Airdrie, 27217; dam, Lulu, by Red Cloud, 12717.

3—Ohio 1st, bred and exhibited by C. Dodge & Son, South New Lyme, O; dropped April 8, 1879; sire, Royal Briton, 15393; dam, Lady Mary 2d. (Vol. 13, A. H. B.)

4—Ohio 2d, bred and exhibited by C. Dodge & Son, South New Lyme, O; dropped April 2, 1879; sire, Royal Briton, 15393; dam, Martha 6th. (Vol. 12, A. H B)

5—Corporal, exhibited by John B Sherman, Chicago; bred by J. Highmore, Rochester; dropped November 21, 1879; sire, Canada Prince, 3241; dam, Crocus. Vol. 6.

Steer or Spayed Heifer, 1 and under 2 years—3 entries.

6—Cassius 5th, exhibited by Cobb & Phillips, Kankakee; bred by Emory Cobb, Kankakee; dropped October 27, 1881; sire, Acomb's Duke, 25486; dam, Constance of Riverview.

7—Cassius 4th, exhibited by Cobb & Phillips, Kankakee; bred by Emory Cobb, Kankakee; dropped September 29, 1881; sire, Oxford Wild Eyes 2d, 33428; dam, Constance of Riverview 2d.

8—Clarence Kirklevington; bred and exhibited by Canada West Farm Stock Association, Brantford, Can.; dropped February 8, 1881; sire, 4th Duke of Clarence (33597); dam, Kirklevington Duches of Horton, imported.

Cow, 3 years old or over—8 entries.

9—Rosa Bell, exhibited by Pickrell, Thomas & Smith, Harristown; bred by E S. Butler, Ridgway, Ohio: dropped July 9, 1878; sire, Patron of Husbandry, 17910; dam, Bluebell 14th.

10—Miami of Redwood, exhibited by S. Croft & Bro., Wenona; bred by H. Croft, Wenona, dropped December 1, 1876; sire, 3d Duke of Randolph, 14070; dam, Miami 17th (Vol. 14.)

11—Lady Garfield, exhibited by David Grant, Petersburg; bred by G B. Welsh, Tallula; dropped June 7, 1878; sire, Nelly's Cherub, 40047; dam, Lady Booth 2d.

12—Acorn 6th, exhibited by J. H. Potts & Son, Jacksonville; bred by J. I. Davidson, Balsam, Can.; dropped January 10, 1879; sire, Crown Prince of Athelstane 2d, 16585; dam, Imported Acorn 2d.

13—Royal Charmer 6th, exhibited by Canada West Farm Stock Association, Brantford, Can.; bred by W. W. Lyle, Beaumont Grange, Eng.; dropped March 29, 1877; sire, Thorndale Grand Duke (37593); dam, Royal Kent Charmer.

14—Lily Dale 2d, bred and exhibited by S. E. Prather, Springfield; dropped April 23, 1876; sire, Bruere's Booth, 4519; dam, Lily Dale.

15—Beauty's Maid, exhibited by John D. Gillett, Elkhart; bred by Joseph Bell & Sons, Atlanta; dropped May 31, 1872; sire, Red Sheridan, 10750; dam, Beauty.

16—4th Princess of Thorndale, exhibited by A. M. Winslow's Sons, Kankakee; bred by Chas Woodsworth, Geneseo, N. Y.; dropped December 16, 1877; sire, Earl of Seaham, 8077; dam, 2d Princess of Thorndale.

LOT 2—HEREFORDS.

Steer, or Spayed Heifer 3 and under 4 years—1 entry.

17—Sir Richard, exhibited by M. H. Cochrane, Compton, Can.; bred by T. Fenn, Stonebrook House, Ludlow; dropped October 20, 1879; sire, Sir Romulus, 5542; dam, Damsel 2d, by Stonebrook, 5026.

Steer, or Spayed Heifer 2 and under 3 years—3 entries.

18—Wabash, exhibited by Earl & Stuart, Lafayette, Ind.; bred by the executors of Thos. Frank, Cound Harbor Salop, Eng.; dropped December 3, 1879; sire, Verdant, 5104; dam, Happy Lass, by Hardy, 5037.

19—Excelsior, 4720; exhibited by A. A. Crane & Son, Osco; bred by J. Merryman, Cockeysville, Md.; dropped January 17, 1880; sire, Illinois, 920; dam, Queen of Athens, 4719.

20—Bertie, bred and exhibited by T. L. Miller Co., Beecher; dropped October 23, 1880; sire, Seventy-six, 1093; dam, Bertha, 2743.

Steer or Spayed Heifer 1 and under 2 years—1 entry.

21—My Maryland, 4721, exhibited by A. A. Crane & Son, Osco; bred by J. Merryman, Cockeysville, Md.; dropped December 18, 1880; sire, Illinois, 920; dam, Queen of Athens, 4719.

Cow 3 years old or over—2 entries.

22—Bright Spot, A. R., 5634, exhibited by Fowler & VanNatta, Fowler, Ind.; bred by P Keene Pencraig Caerhon, Monmouth, Eng.; sire, Prime Minister, 5510; dam, 6th, 5635.

23—Princess Alice Maud, 1029, exhibited by T. L. Miller Co., Beecher; bred by J. M man, Cockeysville, Md.; dropped January 26, 1872; sire, Sir Richard 2d, 970 Giantess, 1030

LOT 5—GRADES OR CROSSES.

Steer or Spayed Heifer 3 and under 4 years—24 entries.

24—Broad Horns, grade Hereford, exhibited by G. S. Burleigh, Mechanicsville, Ia by Stanford Jones, Mechanicsville, Ia.; dropped June 15, 1879; sire, Hereford native cow.

25—Jones, grade Hereford, exhited by G. S. Burleigh, Mechanicsville, Ia.; bred b ford Jones, Mechanicsville, Ia.; dropped October 31, 1879; sire, Gold Dus grade cow.

26—Canadian Champion, grade Shorthorn, bred and exhibited by H. & I. Groff, I Can ; dropped May 29, 1879; sire, Ranger (6028); dam, Blossom, by Young Ab (4512).

27—Damon, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by A. H. Winnebago City, Minn.; dropped February 28, 1879; sire, Prince, 2806, A. H. R., native cow.

28—Pythias, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by A. H. Winnebago City, Minn.; dropped February 5, 1879; sire, Prince, 2806, A. H. R.

29—Thad Stevens 2d, grade Shorthorn, exhibited by J. H. Potts & Son, Jackso bred by T. W Hunt, Ashton; dropped April 28, 1879; sire, Laudable, 17493; d grade Shorthorn.

30—Loring, grade Shorthorn, exhibited by D. M. Moninger, Galvin, Ia.; bred by J. W. Dobbin, State Center, Ia.; dropped January 10, 1879; sire, Shorthorn; dam, ⅝ grade Shorthorn.

31—Tom Brown, grade Shorthorn, bred and exhibited by D. M. Moninger, Galvin, Ia.; dropped August 28, 1879; sire, London Duke 10th; dam, 15-16 grade Shorthorn.

32—Sherman, grade Shorthorn, bred and exhibited by D. M. Moninger, Galvin, Ia.; dropped July 15, 1879; sire, London Duke 10th, dam, ⅞ grade Shorthorn.

33—Spot Face, grade Hereford, exhibited by C. M. Culbertson, Chicago; bred by H. S. Kline, Wauseon, O.; dropped December 30, 1878; sire, Ridgeville Boy, 1476; dam, common cow.

34—Duke, grade Hereford, bred and exhibited by Thos. Foster, Flint, Mich.; dropped June 24, 1879; sire, Lord Berwick, 1292; dam, ¾ grade Devon.

35—Diamond, grade Hereford, bred and exhibited by Thos. Foster, Flint, Mich.; dropped June 27, 1879; sire, Lord Berwick, 1292; dam, ¾ grade Devon.

36—Wild Indian, grade Shorthorn, bred and exhibted by John D. Gillett, Elkhart; dropped April 10, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

37—Comet, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped August 17, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

38—Clincher, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped February 15, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

39—Chance, grade Shorthorn, bred and exhitbited by John D. Gillett, Elkhart; dropped September 15, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

40—Storm, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped May 15, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

41—Garfield, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped May 15, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

42—Arthur, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped May 15, 1879; sire Shorthorn; dam, ⅞ grade Shorthorn.

43—John Sherman, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped June 15, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

44—Cash, grade Shorthorn, bred and exhibted by John D. Gillett, Elkhart; dropped February 15, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

Chub, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped August 15, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

ls. Morris, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped eptember 1, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

or, grade Shorthorn, bred and exhibited by J. H. Potts & Son, Jacksonville; ropped November 15, 1879; sire, Major Richmond, 30453; dam, ¾ grade Shorthorn.

Steer or Spayed Heifer, 2 and under 3 years—19 entries:

Blaine, grade Shorthorn, bred and exhibited by Geo. B. Welsh, Tallula; dropped pril 26, 1880; sire, Major Taylor, 39816; dam, Sallie.

dy, grade Shorthorn, bred and exhibited by Geo. B. Welsh, Tallula; dropped pril 18, 1880; sire, grade Shorthorn; dam, grade Shorthorn.

, grade Shorthorn, bred and exhibited by H. Norris & Son, Aurora; dropped arch 18, 1880; sire, Thoughtful, 1163; dam, ¼ Shorthorn, ¼ Devon, ½ Native.

y, grade Shorthorn, bred and exhibited by H. Norris & Sons, Aurora; dropped ebruary 24, 1880; sire, Thoughtful, 1163; dam, ¾ Shorthorn, ¼ Native.

ng Aberdeen, grade Shorthorn, bred and exhibited by H. & I. Groff, Elmira, Can.; ropped May 27, 1880; sire, Young Aberdeen (4512), dam, Princess, by Young Aberdeen (4512).

nell, grade Shorthorn, bred and exhibited by D. M. Moninger, Galvin, Ia.; dropped ebruary 7, 1880; sire, London Duke, 10; dam, ⅞ Shorthorn.

Scott, grade Shorthorn, bred and exhibited by D. M. Moninger, Galvin, Ia.; ropped January 15, 1880; sire, London Duke, 10; dam, ⅞ Shorthorn.

nett, grade Shorthorn, bred and exhibited by D. M. Moninger, Galvin, Ia.; dropped November 30, 1879; sire, London Duke, 10; dam, ⅞ Shorthorn.

56—Harry West, grade Shorthorn, bred and exhibited by D. M. Moninger, Galvin, Ia.; dropped September 30, 1880; sire, London Duke, 10; dam, 15-16 Shorthorn.

57—Roan Boy, grade Hereford, bred and exhibited by C. M. Culbertson, Chicago; dropped December 30, 1880; sire, Freeport; dam, grade Shorthorn.

58—Mammoth, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped July 10, 1880; sire, Shorthorn; dam, ⅞ grade Shorthorn.

59—Jesse, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped April 10, 1880; sire, Shorthorn; dam, ⅞ grade Shorthorn.

60—Baldwin, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped April 25, 1880; sire, Shorthorn; dam, ⅞ grade Shorthorn.

61—Tip Top, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped June 11, 1880; sire, Shorthorn; dam, ⅞ grade Shorthorn.

62—Conqueror II, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by Mr. Creea, North Bloomfield, O.; dropped July 2, 1880; sire, Centennial, 1099; dam, common cow.

63—Beecher, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by Mr. Creea, North Bloomfield, O.; dropped March 24, 1880; sire, Centennial, 1099; dam, common cow.

64—Highland Lad, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by Mr. Creea, North Bloomfield, O.; dropped March 18, 1880; sire, Centennial, 1099; dam, common cow.

65—Wallace, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by Mr. Creea, North Bloomfield, O.; dropped March 12, 1880; sire, Centennial, 1099; dam, common cow.

66—King William, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by Mr. Creea, North Bloomfield, O.; dropped March 20, 1880; sire, Centennial, 1099; dam, common cow.

Steer or Spayed Heifer; 1 and under 2 years—17 entries.

67—Benton's Champion, grade Hereford, bred and exhibited by Fowler & VanNatta, Fowler, Ind.; dropped April 20, 1881; sire, Oxford; dam, Grade Shorthorn.

68—Squire, grade Hereford, bred and exhibited by Fowler & VanNatta, Fowler, Ind.; dropped May 3, 1881; sire, Oxford; dam, common cow.

69—Curly Jim—grade Hereford, bred and exhibited by Fowler & VanNatta, Fowler, Ind.; dropped May 1, 1881; sire, Oxford; dam, common cow.

70—Ohio, grade Hereford, exhibited by A. A. Crane & Son, Osco; bred by E. B. Mason, Painesville, O.; dropped February 1, 1881; sire, Moses the Prophet (Volume 2); dam, ½ grade Hereford.

71—Mason, grade Hereford, exhibited by A. A. Crane, & Son, Osco; bred by E. B. Mason, Painesville, O.; dropped March 10, 1881; sire, Moses the Prophet (Volume 2); dam, ½ grade Hereford.

72—Red Major, grade Shorthorn, bred and exhibited by J. H. Potts & Son, Jacksonville; dropped November 30, 1880; sire, Major Richmond 30253; dam, ¾ Shorthorn.

73—Experiment, grade Hereford, exhibited by Stone & Loake, Stonington; bred by R. J. Stone, Stonington; dropped July 28, 1881; sire, Bonnie Lad, Hereford; dam, Dolly, grade Shorthorn and Alderney.

74—Drift, grade Shorthorn, bred and exhibited by C. L. Blanchard, Morenci, Mich.; dropped March 5, 1881; sire, Snowball, by Rosabella's Duke 24670; dam, Grade Hereford, by Paine 7092.

75—White Back, grade Hereford, exhibited by C. M. Culbertson, Chicago; bred by —— Peacock, Rockford; dropped November 25, 1880; sire, Pedro; dam, ½ Hereford

76—Champion of Iowa, grade Shorthorn; bred and exhibited by D. M. Moninger, Galvin Ia.; dropped November 30, 1880; sire, London Duke 10; dam, ⅞ Shorthorn.

77—T. Eastman, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped January 2, 1881; sire, Shorthorn; dam, ⅞ grade Shorthorn.

78—Waixel, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped August 18, 1881; sire, Shorthorn; dam, ⅞ grade Shorthorn.

79.—J. Adams, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped May 15, 1881; sire, Shorthorn; dam, ⅞ grade Shorthorn.

80—Conover, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped June 10, 1881; sire, Shorthorn; dam, ⅞ grade Shorthorn.

81—Sir Thomas, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by E. Smith, Beecher; dropped December 1, 1880; sire, ¾ grade Hereford; dam, common cow

82—St. Paul, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by William Esson, Peotone; dropped May 15, 1881; sire, St. Paul 2000; dam, Common cow.

83—Eighty-One, grade Hereford, bred and exhibited by T. L. Miller Co., Beecher; dropped June 9, 1881; sire, Seventy-Six 1093; dam, common cow.

Cow, 3 years old or over—3 entries.

84—Ohio Belle, grade Shorthorn, exhibited by C. Dodge & Son, South New Lyme, O.; bred by B. Waddel, Marion, O.; dropped May 23, 1878; sire, Shorthorn; dam, ¾ Shorthorn.

85—Nellie, grade Shorthorn, bred and exhibited by D. M. Moninger, Galvin, Ia.; dropped April 15, 1877; sire, London Duke 10; dam, ⅞ Shorthorn.

86—Lady Peerless, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped May 15, 1878; sire, Shorthorn; dam, ⅞ grade Shorthorn.

Lot 7—GRAND SWEEPSTAKES.

Best Steer, Spayed Heifer or Cow in the Show—27 entries

87—McMullen, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart: dropped June 15, 1878; sire, Shorthorn; dam, ¾ grade Shorthorn.

88—Red Dick, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped October 5, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

89—Duke, grade Shorthorn, bred and exhibited by C. Dodge & Son South New Lyme O.; dropped January 7, 1878; sire, Five-Twenty 8140, dam, Lady Jane 5th.

90—Dandy, grade Shorthorn, bred and exhibited by C. Dodge & Son. New South Lyme O.; dropped January 7, 1878; sire, Five-Twenty 8140; dam, Lady Jane 5th.

91—Bell Duke, Shorthorn, exhibited by John B. Sherman, Chicago; bred by J. Hulburt, Adair county, Iowa; dropped April 22, 1878; sire, Shorthorn; dam, Shorthorn

92—Jim Blaine, grade Shorthorn, exhibited by John B. Sherman, Chicago; bred by J. C. Ramsey, Onarga; dropped June 15, 1878; sire, Shorthorn; dam, ½ grade Shorthorn.

93—King David, grade Shorthorn, bred and exhibited by H. B Varnum, Marshalltown, Iowa; dropped November 19, 1876; sire, Shorthorn; dam, grade Shorthorn.

Lot 8—CAR LOADS.

Cattle, 3 and under 4 years—4 entries.

94—Dobbin, grade Shorthorn, exhibited by D. M. Moninger, Galvin, Iowa; bred by J. W. Dobbin, State Center, Iowa; dropped December 25, 1878; sire, Shorthorn: dam, ⅞ Shorthorn.

95—Barnes, grade Shorthorn, bred and exhibited by D. M. Moninger, Galvin, Iowa; dropped May 20, 1879; sire, London Duke 10; dam, ⅞ Shorthorn.

96—Kimball, grade Shorthorn, exhibited by D. M. Moninger, Galvin, Iowa; bred by County Farm, Lamoille, Iowa; dropped April 30, 1879; sire, London Duke 10; dam, ⅞ Shorthorn.

97—Wick, grade Shorthorn, exhibited by D. M. Moninger, Galvin, Iowa; bred by A. Wickersham, Lamoille, Iowa; dropped June 30, 1879; sire, Shorthorn; dam, ¾ Shorthorn.

98—Ward, grade Shorthorn, bred and exhibited by D. M. Moninger, Galvin, Iowa; dropped December 30, 1878; sire, London Duke 10; dam, ⅞ Shorthorn.

99—Oakley, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped March 15, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

100—Captain Jack, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped July 25, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

101—Blood, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped July 14, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

102—E. S. Wood, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped February 26, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

103—Wild Bill, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped June 15, 1879; sire, Shorthorn; dam, ⅞ grade Shorthorn.

104—Barnum, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by J. Hutson, Moawequa; dropped May 15, 1879; sire, Hereford; dam, common cow.

105—Jumbo, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by J. Hutson, Moawequa; dropped May 15, 1879; sire, Hereford; dam, common cow.

106—Abbey, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by H. & N. Abbey, Elyria, Ohio; dropped May 16, 1879; sire, Hereford; dam, common cow.

107—Prince, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by A. H. Bullis, Winnebago City, Michigan; dropped February 29, 1879; sire, Prince 2806; dam, common cow.

108—Buck, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by A. H. Bullis, Winnebago City, Michigan; dropped February 2, 1879; sire, Prince 2806; dam, common cow.

109—Bright, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by A. H. Bullis, Winnebago City, Michigan; dropped February 12, 1879; sire, Prince 2806; dam, common cow.

Cattle, 2 and under 3 years—8 entries.

110—Clarkson, grade Shorthorn, bred and exhibited by D. M. Moninger, Galvin, Iowa; dropped February 27, 1880; sire, London Duke 10; dam, ⅞ Shorthorn.

111—Porter, grade Shorthorn, bred and exhibited by D. M. Moninger, Galvin, Iowa; dropped December 25, 1879; sire, London Duke 10; dam, ⅞ Shorthorn.

112—Shaffer, grade Shorthorn, bred and exhibited by D. M. Moninger, Galvin, Iowa; dropped February 1, 1880; sire, London Duke 10; dam, ⅞ Shorthorn.

113—Smith, grade Shorthorn, bred and exhibited by D. M. Moninger, Galvin, Iowa; dropped December 30, 1879; sire, London Duke 10; dam, ⅞ Shorthorn.

114—Champion, grade Shorthorn, bred and exhibited by D. M. Moninger, Galvin, Iowa, dropped December 7, 1879; sire, London Duke 10; dam, ⅞ Shorthorn.

115—Knight, grade Shorthorn, bred and exhibited by D. M. Moniger, Galvin, Iowa; dropped December 28, 1879; sire, London Duke 10; dam, ⅞ Shorthorn.

116—Blackstone, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped March 1, 1880; sire, Shorthorn; dam, ⅞ grade Shorthorn.

117—Bud, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped March 10, 1880; sire, Shorthorn; dam, ⅞ grade Shorthorn.

118—Justin, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped April 15, 1880; sire, Shorthorn; dam, ⅞ grade Shorthorn.

119—Houston, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped May 1, 1880; sire, Shorthorn; dam, ⅞ grade Shorthorn.

120—Dick, grade Sorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped May 2, 1880; sire, Shorthorn; dam, ⅞ grade Shorthorn.

121—Downhorn, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped May 1, 1880; sire, Shorthorn; dam, ⅞ grade Shorthorn.

122—Napoleon, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by A. H. Bullis, Winnebago City, Mich.; dropped January 15, 1880; sire, Prince 2806; dam, common cow.

123—Murat, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by A. H. Bullis, Winnebago City, Mich.; dropped January 16, 1880; sire, Prince 2806; dam, common cow.

124—Ney, grade Hereford, exhibited by T. L. Miller Co.; bred by A. H. Bullis, Winnebago City, Mich.; dropped January 17, 1880; sire, Prince 2806; dam, common cow.

125—Ohio Chief, grade Hereford, exhibited by T. L. Miller Co., Beecher; dropped March 15, 1880; sire, Hereford; dam, common cow.

126—Marion, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by Mr. Creea, North Bloomfield, Ohio; dropped April 10, 1880; sire, Centennial 1099; dam, common cow.

Twelve Cattle 1 and under 2 years—1 entry.

127—J. Wood, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped April 10, 1881; sire, Shorthorn; dam, ⅞ grade Shorthorn.

128—Doc. Wood, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped May 20, 1881; sire, Shorthorn; dam, ⅞ grade Shorthorn.

129—Cherry, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped August 20, 1881; sire, Shorthorn; dam, ⅞ grade Shorthorn.

130—G. Adams, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped May 15, 1881; sire, Shorthorn; dam, ⅞ grade Shorthorn.

131—Truman, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped June 2, 1881; sire, Shorthorn; dam, ⅞ grade Shorthorn.

132—Hoxie, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped June 16, 1881; sire, Shorthorn; dam, ⅞ grado Shorthorn.

133—Chub, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped July 3, 1881; sire, Shorthorn; dam, ⅞ grade Shorthorn.

134—Waixel, Jr., grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped August 24, 1881; sire, Shorthorn; dam, ⅞ grade Shorthorn.

LOT 9—DRESSED CARCASS.

Steer or Spayed Heifer 3 and under 4 years—5 entries

135—Solomon, grade Hereford, exhibited by C. M. Culbertson, Chicago; bred by Wm. Richardson, Wauseon, Ohio; dropped May 9, 1879; sire, Ridgeville Boy 1476; dam, ½ grade Hereford.

Steer or Spayed Heifer 2 and under 3 years—3 entries:

136—Curly Coat, grade Hereford, exhibited by C. M. Culbertson, Chicago; bred by H. S. Kline, Wauseon, Ohio; dropped Nov. 25, 1880; sire, New Year's Day; dam, ½ grade Hereford.

Steer or Spayed Heifer 1 and under 2 years—3 entries.

137—The Deacon, grade Shorthorn, bred and exhibited by John D. Gillett, Elkhart; dropped March 10, 1881; sire, Shorthorn; dam, ⅞ grade Shorthorn.

LOT 11—HEAVIEST FAT STEER.

Seven entries:

138—Tim, grade Shorthorn, exhibited by John B. Sherman, Chicago; bred by —. Griffith, Boone Co.; sire, Shorthorn; dam, ½ grade Shorthorn.

139—Eddy Morris, Shorthorn; exhibited by John B. Sherman, Chicago; bred by H. C. Nelson, Canton; dropped April 8, 1876; sire, The Cardinal; dam, Venesse.

140—Booth, Shorthorn, exhibited by John B. Sherman, Chicago; bred by Wm. Sandusky, Indianola; dropped February 13, 1877; sire, Baron Booth 34480; dam, Molly 3d.

141—Snowdrift, grade Shorthorn, exhibited by Allen Varner, Indianola; bred by Silas Wright, Indianola; dropped March 16, 1877; sire, Shorthorn; dam, ½ grade Shorthorn.

Lot 13—COST OF PRODUCTION.

Steer or Spayed Heifer 1 and under 2 years—4 entries.

142—Hattie, grade Hereford, bred and exhibited by G. S. Burleigh, Mechanicsville, Iowa; dropped September 4, 1881; sire, 2d Duke of Manchester 1801; dam, grade Shorthorn.

CLASS B—HORSES.

DAVID E. BEATY, *Superintendent.*

Lot 14—HORSES ON EXHIBITION.

143—Atlas (2386), exhibited by J. H. Truman, Chicago; bred by George Morton, South Hilgay, Downham, Norfolk, Eng.; foaled 1877; sire, Ajax (75); dam, Gipsy, by Major (1456).

144—Huntingsdonshire Duke, exhibited by J. H. Truman, Chicago; bred by John Longland, Warboys, Huntingsdonshire, Eng.; foaled 1875; sire, Prince of the Isle (1806); dam, Lightsome, by Honest Tom (1098).

145—Brown Prince, exhibited by J. H Truman, Chicago; bred by E. Foreman, Thorney, Cambridgeshire, Eng.; foaled 1879; sire, Champion (450); dam, by Prince of the Isle (1806).

146—Harlequin, exhibited by J. H. Truman, Chicago; bred by James Staples, Soham, Cambridgeshire, Eng.; foaled 1880; sire, Thumper (Taylor's); dam, Short, by Thumper (2135).

147—Bouncer (2538), exhibited by J. H. Truman, Chicago; bred by John Caton, Ramsey, Huntingdonshire, England.; foaled 1880; sire, Honest Tom 2d (1122); dam, Gipsey, by Black Prince (162).

148—Gipsy Girl, exhibited by J. H. Truman, Chicago; bred by Charles Collins, Cottenham, Cambridgeshire, Eng.; foaled 1879; sire, Leviathan (1324); dam, Cottenham Diamond, by King of the Fens (1237).

149—Beauty, exhibited by J. H. Truman, Chicago; bred by Henry Blake, Sutton, Ely, Cambridgeshire, Eng.; foaled 1879; sire, Waxwork (2309); dam, Brown, by Major (1467).

150—Brown's Duchess 1st, exhibited by J H. Truman, Chicago; bred by George H. Fullard, Thorney, Isle of Ely, Cambridgeshire, Eng.; foaled 1879; sire, Iron Duke (1157); dam, Blossom 2d, by Major (1462).

151—Brown Duchess 2d, exhibited by J. H. Truman, Chicago; bred by George H. Fullard, Thorney, Isle of Ely, Cambridgeshire, Eng.; foaled 1880; sire, Iron Duke (1157); dam, Blossom 2d, by Major (1462).

152--Mrs. Langtry, exhibited by J. H. Truman, Chicago; bred by John Nix, Holwood House, Somersham, Huntingdonshire, Eng.; foaled 1880; sire, Acorn (20); dam, Beauty, by Solomon (2031).

153—Sir Edward, exhibited by J H. Truman, Chicago; bred by Edward Pawlett, St. James, Deeping, Lincolnshire, Eng.; foaled 1881; sire, Samson 2d, (1988); dam, Sweep, by Le Bon (1305).

CLASS C—SHEEP.

E. B. DAVID, *Superintendent.*

Lot 15—LONG WOOLS.

Wether, 2 and under 3 years—8 entries:

154—Dick, Cotswold, bred and exhibited by J. A. Brown & Son, Decatur; dropped March 24, 1880; sire, Grey Prince 3d; dam, Jane.

155—Curly, Cotswold, bred and exhibited by J. A. Brown & Son, Decatur; dropped March 26, 1880; sire, Grey Prince 3d; dam, Daisy.

156—Leggy, Cotswold, bred and exhibited by J. A. Brown & Son, Decatur; dropped Marc 30, 1880; sire, Grey Prince 3d; dam, Pet.

157—Jerry, Cotswold, bred and exhibited by Frank Willson, Jackson, Mich.; dropped March 15, 1880; sire, Cotswold; dam, Cotswold.

158—Turpin, Cotswold, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 10, 1880; sire, Cotswold; dam, Cotswold.

159—Thom. Nichols, Leicester, exhibited by M. N. Hood, Guelph, Can.; bred by Thom. Nichols, Plattsville, Can.; dropped April 15, 1880; sire, Leicester; dam, Leicester.

160—Dave, Leicester, exhibited by M. N Hood, Guelph, Can.; bred by Thom. Nichols, Plattsville, Can.; dropped April 17, 1880; sire, Leicester; dam, Leicester.

161—Blackfoot, Leicester, exhibited by M. N. Hood, Guelph, Can ; bred by Thom. Nichols, Plattsville, Can.; dropped April 16, 1880; sire, Leicester; dam, Leicester.

Wether, 1 and under 2 years—6 entries.

162—Smut Face, Cotswold, bred and exhibited by J A. Brown & Son, Decatur; dropped March 18, 1881; sire, Imported Captor; dam, Queen.

163—Upstart, Cotswold, bred and exhibited by J. A. Brown & Son, Decatur; dropped March 18, 1881; sire, imported Captor; dam, Mary.

164—Dandy, Cotswold, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped December 1, 1880; sire, Dudmaston; dam, Lane Ewe.

165—Mack, Cotswold, bred and exhibited by Frank Willson, Jackson, Mich.; dropped April 8, 1881; sire, Cotswold; dam, Cotswold.

166—Marmion, Leicester, exhibited by M. N. Hood, Guelph, Can.; bred by William Whitelaw, Guelph, Can.; dropped March 25, 1881; sire, Bosanquit; dam, Imported Leicester.

167—Robin Hood, Leicester, exhibited by M N. Hood, Guelph, Can.; bred by John Thompson, Guelph, Can.; dropped April 20, 1881; sire, Leicester; dam, Canadian Ewe.

Wether, under 1 year—3 entries.

168—Smut Lamb, Cotswold, bred and exhibited by J. A. Brown & Son, Decatur; dropped March 22; 1881: sire, imported Captor; dam, Grey Face.

169—Roger, Lincolnshire, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 24, 1882; sire, Royal; dam, Lincoln.

170—Jim Kelly, Leicester, exhibited by M. N. Hood, Guelph, Can.; bred by John Kelly, Shakespeare, Can.; dropped March 25, 1882; sire, Leicester; dam, Leicester.

Ewe, 2 and under 3 years—4 entries

171—Queen, Cotswold, bred and exhibited by J. A. Brown & Son, Decatur; dropped March 24, 1880; sire, Grey Prince 3d; dam, Old Queen.

172—Big Mary, Lincolnshire, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 2, 1880; sire, Lincolnshire; dam, Lincolnshire.

173—Maud S., Cotswold, exhibited by Frank Willson, Jackson, Mich.; bred by E. Tombs, Brampton, Can.; dropped March 15, 1880; sire, Cotswold; dam, Cotswold.

174—Molly, Cotswold, exhibited by Frank Willson, Jackson, Mich.; bred by E. Tombs, Brampton, Can.: dropped March 15, 1880; sire, Cotswold; dam, Cotswold.

Ewe, 1 and under 2 years—2 entries

175—Bessie, Lincolnshire, bred and exhibited by Mrs. Anne Newton, Pontiac. Mich.; dropped March 23, 1881; sire. Lincolnshire; dam, Lincolnshire.

176—Jennie, Cotswold, exhibited by Frank Willson, Jackson, Mich.; bred by H. Sorby, Guelph, Can.; dropped March 20, 1881; sire, Cotswold; dam, Cotswold.

Ewe, under 1 year—1 entry.

177—Polly, Cotswold, bred and exhibited by Frank Willson, Jackson, Mich.; dropped April 12, 1882; sire, Cotswold; dam, Cotswold.

LOT 16—MIDDLE WOOLS.

Wether, 2 and under 3 years—6 entries

178—Tom, Southdown, exhibited by J. H. Potts & Son, Jacksonville; bred by J. Leach, Jacksonville; dropped April 1, 1880; sire, Southdown; dam, Southdown.

179—Dick, Southdown, exhibited by J. H. Potts & Son, Jacksonville; bred by J. H. Leach, Jacksonville; dropped April 1, 1880; sire, Southdown; dam, Southdown.

180—Harry, Southdown, exhibited by J. H. Potts & Son, Jacksonville; bred by J. Leach, Jacksonville; dropped March 25, 1880; sire, Southdown; dam, Southdown.

181—Captor, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 1, 1880; sire, Shropshiredown; dam, Shropshiredown.

182—Monarch, Shropshiredown, bred and exhibited by Morgan & Cotton, Rockford; dropped April 3, 1880; sire, Shropshiredown; dam, Shropshiredown.

183—Milton, Shropshire, bred and exhibited by Morgan & Cotton, Rockford; dropped April 10, 1880; sire, Shropshiredown; dam, Shropshiredown.

Wether 1 and under 2 years—4 entries.

184—No. 21, Southdown, bred and exhibited by J. H. Potts & Son, Jacksonville; dropped April 5, 1881; sire, Lord Throckmorton; dam, No. 13.

185—No. 28, Southdown, bred and exhibited by J. H. Potts & Son, Jacksonville; dropped March 25, 1881; sire, Lord Throckmorton; dam, No. 4.

186—No. 26, Southdown, bred and exhibited by J. H. Potts & Son, Jacksonville; dropped April 5, 1881; sire, Lord Throckmorton; dam. No. 31.

187—Tom, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich; dropped March 10, 1881; sire, Shropshiredown; dam, Shropshiredown.

Wether under 1 year—4 entries.

188—No. 32, Southdown, bred and exhibited by J. H. Potts & Son, Jacksonville; dropped March 19, 1882; sire, Lord Throckmorton; dam, No. 32.

189—No. 34, Southdown bred and exhibited by J. H. Potts & Son, Jacksonville; dropped March 15, 1882; sire, Lord Throckmorton; dam, No. 5.

190—No. 38, Southdown, bred and exhibited by J. H Potts & Son, Jacksonville; dropped March 10, 1882; sire, Lord Throckmorton; dam, No. 4.

191—Lue, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich; dropped April 3, 1882; sire, James Scott; dam, Fanner.

Ewe 2 under 3 years—4 entries.

192—Topsy, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 4, 1880; sire, Shropshiredown; dam, Fanner.

193—Chubby, Southdown, exhibited by Frank Willson, Jackson, Mich., bred by H. Sorby, Guelph, Can.; dropped April 1, 1880; sire, Southdown; dam, Southdown.

194—Georgie, Shropshiredown, bred and exhibited by Morgan & Cotton, Rockford; dropped April 5, 1880; sire, Shropshiredown; dam, Shropshiredown.

195—Bertie, Shropshiredown, bred and exhibited by Morgan & Cotton, Rockford; dropped April 12, 1880; sire, Shropshiredown; dam, Shropshiredown.

Ewe 1 and under 2 years—5 entries.

196—Miss Winchendon, Oxford, exhibited by Stone & Loake, Stonington, bred by John Treadwell, Winchendon, Eng.; dropped March 1, 1881; sire, Hobbs No. 6; dam, Oxford.

197—Miss Kate, Oxford, exhibited by Stone & Loake, Stonington, bred by John Treadwell, Winchendon, Eng.; dropped March 4, 1881; sire, Royal Liverpool; dam, Oxford.

198—Rosette, Oxford, exhibited by Stone and Loake, Stonington, bred by John Treadwell, Winchendon, Eng.; dropped March 5, 1881; sire, Oxford; dam, Oxford.

199—Beatrice, Oxford, exhibited by Stone & Loake, Stonington, bred by John Treadwell, Winchendon, Eng.; dropped March 6, 1881; sire, Oxford; dam, Oxford.

200—Necklace, Oxford, exhibited by Stone & Loake, Stonington, bred by John Treadwell, Winchendon, Eng., dropped March 8, 1881; sire, Prince of Wales; dam, Oxford.

Ewe under 1 year—1 entry.

201—Nell, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich; dropped March 20, 1882; sire, Columbus; dam, Shropshiredown.

LOT 17—FINE WOOLS.

Ewe 2 years old or over—4 entries.

202—Queen 104, Merino, bred and exhibited by E. Peck & Sons, Geneva; dropped April 1, 1875; sire, Kelley; dam, Old Queen.

203—Long Wool 102, Merino, bred and exhibited by E. Peck & Sons, Geneva; dropped April 1, 1880; sire, Hibbard No. 102; dam, Perfection.

204—Lady Clark, Merino, exhibited by Taylor Bros., Waynesville; bred by —— Clark, Waukesha, Wis.; dropped April 13, 1878; sire, Merino; dam, Merino.

205—Jane, Merino, bred and exhibited by Taylor Bros., Waynesville; dropped April 12, 1879; sire, Merino; dam, Merino.

Ewe 1 and under 2 years—1 entry.

206—Bess 147, Merino, bred and exhibited by E. Peck & Sons, Geneva: dropped April 1, 1881; sire, Paul No. 444; dam, Balls Ewe.

Ewe under 1 year—1 entry.

207—Daisy 208, Merino, bred and exhibited by E. Peck & Sons, Geneva, dropped April 1, 1882; sire, Bush No. 207; dam, No 25.

LOT 18—GRADES OR CROSSES.

Wether, 2 and under 3 years—5 entries.

208—Ben, grade Merino, bred and exhibited by B. Waddel, Marion, O.; dropped, January 14, 1880. Sire, grade Merino; dam, Cotswold.

209—Will, grade Merino, bred and exhibited by B. Waddell, Marion, O.; dropped, January 17, 1880. Sire, grade Merino; dam, Merino.

210—Fant, grade Merino, bred and exhibited by B. Waddell, Marion, O.; dropped, January 20, 1880; sire, grade Merino; dam, Merino.

211—Fred, grade Oxford, exhibited by M. N. Hood, Guelph, Can.; bred by John Murphy, Guelph, Can.; dropped, May 5, 1880; sire, Oxford; dam, Cotswold.

212—Willie, grade Oxford, exhibited by M. N. Hood, Guelph, Can.; bred by John Murphy, Guelph, Can.; dropped May 5, 1880; sire, Oxford; dam, Cotswold and Leicester.

Wether, 1 and under 2 years—4 entries.

213—Abe, grade Cotswold, bred and exhibited by Frank Willson, Jackson, Mich.; dropped April 1, 1881; sire, Cotswold; dam, Southdown.

214—Lord Boyle, grade Oxford, exhibited by M. N. Hood, Guelph, Can.; bred by Ontario Experimental Farm; dropped April 15, 1881; sire, Brassy; dam, Canadian grade ewe.

215—Professor, grade Shropshire, exhibited by M. N. Hood, Guelph, Can.; bred by Ontario Experimental Farm; dropped March 29, 1881; sire, Nocks, 1880; dam, Canadian grade ewe.

216—Walsingham, grade Southdown, exhibited by M. N. Hood, Guelph, Can.; bred by Ontario Experimental Farm; dropped April 9, 1881; sire, Walsingham; dam, Canadian grade ewe.

Wether under 1 year—3 entries.

217—Thom, grade Shropshire, exhibited by M. N. Hood, Guelph, Can.; bred by Henry Watson, Guelph, Can.; dropped April 16, 1882; sire, Shropshire; dam, Cotswold and Leicester.

218—Dick, grade Shropshire, exhibited by M. N. Hood, Guelph, Can.; bred by Henry Watson, Guelph, Can.; dropped April 17, 1882; sire, Shropshire; dam, Cotswold and Leicester.

219—Harry, grade Shropshire, exhibited by M. N. Hood, Guelph, Can.; bred by Henry Watson, Guelph, Can.; dropped April 18, 1882; sire, Shropshire; dam Cotswold and Leicester.

Ewe, 2 and under 3 years—3 entries.

220—Flora, grade Cotswold, bred and exhibited by Frank Willson, Jackson, Mich.; dropped April 1, 1880; sire, Cotswold, dam, Southdown.

221—Kate, grade Southdown, exhibited by M. N. Hood, Guelph, Can.; bred by Thos. Lemon, Yorkville, Can.; dropped March 23, 1880; sire, Southdown; dam, Cotswold and Leicester.

222—Belle, grade Southdown, exhibited by M. N. Hood, Guelph, Can.; bred by Thos. Lemon, Yorkville, Can.; dropped March 22, 1880; sire, Southdown; dam, Cotswold and Leicester.

Ewe 1 and under 2 years—4 entries.

223—Nannie, grade Cotswold, bred and exhibited by Frank Willson, Jackson, Mich.; dropped April 10, 1881; sire, Cotswold; dam, Southdown.

224—Lady Brown, grade Oxford, exhibited by M. N. Hood, Guelph, Can.; bred by Ontario Experimental Farm; dropped April 10, 1881; sire, Brassy; dam, grade Oxford.

225—Eugenie, grade Merino, exhibited by M. N. Hood, Guelph, Can.; bred by Geo. Hood, Guelph, Can.; dropped April 15, 1881; sire, French Merino; dam, Cotswold and Leicester.

226—Betsy, grade Oxford, exhibited by M. N. Hood, Guelph, Can.; bred by Geo. Hood, Guelph, Can.; dropped April 14, 1881; sire, Oxford; dam, Cotswold and Leicester.

Ewe under 1 year—3 entries.

227—Nannie, grade Shropshire, exhibited by M. N. Hood, Guelph, Can.; bred by Henry Watson, Guelph, Can.; dropped April 25, 1882; sire, Shropshire; dam, Cotswold and Leicester.

228—Minnie, grade Shropshire, exhibited by M. N. Hood, Guelph, Can.; bred by Henry Watson, Guelph, Can.; dropped April 12, 1882; sire, Shropshire; dam, Cotswold and Leicester.

229—May, grade Merino, exhibited by M. N. Hood, Guelph, Can.; bred by Geo. Hood, Guelph Can.; dropped April 11, 1882; sire, French Merino; dam, Cotswold and Leicester.

LOT 20—GRAND SWEEPSTAKES.

Best Wether or Ewe in the show—23 entries.

230—Model, Shropshiredown, bred and exhibited by Morgan & Cotton, Rockford; dropped March 30, 1879; sire, Shropshiredown; dam, Shropshiredown.

231—George, Shropshiredown, bred and exhibited by B. Waddel, Marion, O.; dropped January 22, 1878; sire, Merino; dam, Shropshire, Perfection.

232—Nellie Ackers, Cotswold, exhibited by M. N. Hood, Guelph, Can.; bred by —— Ackers, England; dropped March 17, 1879; sire, Cotswold; dam, Cotswold.

LOT 21—HEAVIEST FAT SHEEP—7 ENTRIES.

233—Maud S., Cotswold, exhibited by Frank Willson, Jackson, Mich.; bred by E. Tombs Brampton, Can.; dropped March 15, 1880; sire, Cotswold; dam, Cotswold.

LOT 22—CAR LOADS.

30 Fat Wethers, 2 and under 3 years—1 entry.

234—George, Cotswold, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 2, 1880; sire, Cotswold; dam, Cotswold.

235—No. 1, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 3, 1880; sire, Shropshiredown; dam, Shropshiredown.

236—No. 2, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 3, 1880; sire, Shropshiredown; dam, Shropshiredown.

237—No. 3, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 4, 1880; sire, Shropshiredown; dam, Shropshiredown.

38—No. 4, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 10, 1880; sire, Shropshiredown; dam, Shropshiredown.

239—No. 5, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 10, 1880; sire, Shropshiredown; dam, Shropshiredown.

240—No. 6, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 10, 1880; sire, Shropshiredown; dam, Shropshiredown.

241—No. 7, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 10, 1880; sire, Shropshiredown; dam, Shropshiredown.

242—No. 8, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 11, 1880; sire, Shropshiredown; dam Shropshiredown.

243—No. 9, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped March 11, 1880; sire, Shropshiredown; dam, Shropshiredown.

244—No. 10, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 10, 1880; sire, Shropshiredown; dam, Shropshiredown.

245—No. 11, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 13, 1880; sire, Shropshiredown; dam, Shropshiredown.

246—No. 12, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 13, 1880; sire, Shropshiredown; dam, Shropshiredown.

247—No. 13, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 13, 1880; sire, Shropshiredown; dam, Shropshiredown.

248—No. 14, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 13, 1880; sire, Shropshiredown; dam, Shropshiredown.

249—No. 15, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 16, 1880; sire, Shropshiredown; dam, Shropshiredown.

250—No. 16, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 16, 1880; sire, Shropshiredown; dam, Shropshiredown.

251—No. 17, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 16, 1880; sire, Shropshiredown; dam, Shropshiredown.

252—No. 18, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 16, 1880; sire, Shropshiredown; dam, Shropshiredown.

253—No. 19, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 16, 1880; sire, Shropshiredown; dam, Shropshiredown.

254—No. 20, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 16, 1880; sire, Shropshiredown; dam, Shropshiredown.

255—No. 21, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 16, 1880; sire, Shropshiredown; dam, Shropshiredown.

256—No. 22, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 16, 1880; sire, Shropshiredown; dam, Shropshiredown.

257—No. 23, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 16, 1880; sire, Shropshiredown; dam, Shropshiredown.

258—No. 24, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich.; dropped February 16 1880; sire, Shropshiredown; dam, Shropshiredown.

259—No 25, Shropshiredown, bred and exhibited by Mrs. Anne Newton, Pontiac, Mich; dropped February 20, 1880; sire, Shropshiredown; dam, Shropshiredown.

260—No. 26, Shropshiredown, bred and exhibited by Mrs Anne Newton, Pontiac, Mich.; dropped February 20, 1880; sire, Shropshiredown; dam, Shropshiredown.

261—No. 27, Shropshiredown, bred and exhibited by Mrs. Anne Newton. Pontiac, Mich.; dropped February 20, 1880; sire, Shropshiredown; dam, Shropshiredown.

CLASS D—SWINE.

DAVID GORE, *Superintendent*.

LOT 24—BERKSHIRES.

Barrow 1 and under 2 years—3 entries.

262—Bully, bred and exhibited by Taylor Bros., Waynesville; farrowed April 5, 1881; sire, Lord Radnor 3583; dam, Berkshire.

263—Lord Radnor, bred and exhibited by Taylor Bros., Waynesville; farrowed May 10, 1881; sire, Lord Radnor 3583; dam, Berkshire.

264—Billy, bred and exhibited by Taylor Bos., Waynesville; farrowed July 1, 1881; sire, Berkshire; dam, Berkshire.

Barrow under 1 year—1 entry.

265—Lake, exhibited by Taylor Bros., Waynesville; bred by C. Lake, Heyworth; farrowed December 20, 1881; sire, Berkshire, dam, Berkshire.

Sow 1 and under 2 years—1 entry.

266—Emma, bred and exhibited by Taylor Bros., Waynesville; farrowed August 1, 1881; sire, Lord Radnor 3583; dam, Emma 7th.

Sow under 1 year—2 entries.

267—Emeline; bred and exhibited by Taylor Bros., Waynesville; farrowed December 7, 1881; sire, Charlie Foster 2585; dam, Taylor's Beauty 7462.

268—Jane, bred and exhibited by Taylor Bros., Waynesville; farrowed December 7, 1881; sire Charlie Foster 2585; dam, Taylor's Beauty 7462.

LOT 25—POLAND CHINA.

Barrow 1 and under 2 years—13 entries.

269—Bob, bred and exhibited by J. A. Countryman, Rochelle; farrowed March 28, 1881; sire, Magic World Beater; dam, Poland China.

270—Comet, bred and exhibited by J A Countryman, Rochelle; farrowed March 28, 1881; sire, Magic World Beater; dam, Poland China

271—Sweeper bred and exhibited by J. A. Countryman, Rochelle; farrowed May 29, 1881; sire, Major; dam, Poland China.

272—Dasher, bred and exhibited by J. A. Countryman, Rochelle; farrowed May 29, 1881; sire, Major; dam, Poland China.

273—Ned bred and exhibited by J. A. Countryman, Rochelle; farrowed July 30, 1881; sire, Major; dam, Poland China.

274—Herschel bren and exhibited by J, A. Countryman, Rochelle; farrowed July 16, 1881; sire. Major; dam, Poland China.

275—Tom, bred and exhibited by J A Countryman, Rochelle; farrowed September 17, 1881; sire, Major; dam, Poland China.

276—Hooker, bred and exhibited by J A. Countryman, Rochelle; farrowed September 17, 1881; sire, Major; dam, Poland China.

277—Oscar Wilde, bred and exhibited by J A. Countryman, Rochelle; farrowed October 23, 1881; sire, Major; dam, Poland China.

278—Charter Oak, bred and exhibited by J A. Countryman, Rochelle; farrowed November 8, 1881; sire, Major; dam, Poland China.

279—Jumbo, bred and exhibited by J A. Countryman, Rochelle; farrowed March 28, 1881; sire, Magic World Beater; dam, Poland China.

280—Henry, exhibited by Taylor Bros., Waynesville; bred by J. H. Gambrel, Atlanta; farrowed May 22, 1881; sire, Poland; dam. Poland.

281—William, exhibited by Taylor Bros., Waynesville; bred by J. H. Gambrel, Atlanta; farrowed May 10, 1881; sire, Poland; dam, Poland.

Barrow under 1 year—2 entries.

282—Royal Duke, bred and exhibited by J. A. Countryman, Rochelle; farrowed February 4, 1882; sire, Jenny Lind's Duke; dam, Poland China.

283—Sam, bred and exhibited by J. A. Countryman, Rochelle; farrowed April 2, 1882; sire, Jenny Lind's Duke; dam, Poland China.

Sow 1 and under years -7 entries.

284—Lady Douglas, bred and exhibited by J. A. Countryman, Rochelle; farrowed February 27, 1881; sire, Black Douglas; dam, Poland China.

285—Kit Kaiser, bred and exhibited by J. A. Countryman, Rochelle; farrowed April 13, 1881; sire, Magic World-Beater; dam, Poland China.

286—Fraulein, bred and exhibited by J. A. Countryman, Rochelle; farrowed April 26, 1881; sire, Major; dam, Poland China.

287—Prairie Queen, bred and exhibited by J. A. Countryman, Rochelle; farrowed May 12, 1881; sire, Major; dam, Poland China.

288—Flora B., bred and exhibited by J. A. Countryman, Rochelle; farrowed June 9, 1881; sire, Major; dam, Poland China.

289—Flossy, exhibited by Harry Davis, Dyer, Ind.; bred by H. C. Castle, Wilmington; farrowed June 10, 1881; sire, Currency, 507; dam, Queen West, 52,244.

290—Lady Gambrel, exhibited by Taylor Bros., Waynesville; bred by J. H. Gambrel, Atlanta; farrowed June 1, 1881; sire, Poland; dam, Poland.

Sow under 1 year—4 entries.

291—Chunky, bred and exhibited by Taylor Bros., Waynesville; farrowed November 18, 1881; sire, Poland; dam, Poland.

292—Jennie V., bred and exhibited by J. A. Countryman, Rochelle; farrowed November 27, 1881; sire, Major; dam, Poland China.

293—Maud S., bred and exhibited by J. A. Countryman, Rochelle; farrowed April 2, 1882; sire, General; dam, Poland China.

294—Mollie, bred and exhibited by J. A. Countryman, Rochelle; farrowed April 2, 1882; sire, General; dam, Poland China.

LOT 26—CHESTER WHITE AND VICTORIA.

Barrow 1 and under 2 years—4 entries.

295—Lump, Chester White, bred and exhibited by J. A. Brown & Son, Decatur; farrowed April 25, 1881; sire, Jack; dam, Curly.

296—Prince, Victoria, bred and exhibited by Scheidt & Davis, Dyer, Ind.; farrowed July 16, 1881; sire, Victoria; dam, Victoria.

297—Pilot, Victoria, bred and exhibited by Scheidt & Davis, Dyer, Ind.; farrowed July 16, 1881; sire, Victoria; dam, Victoria.

298—Whitey, Chester White, bred and exhibited by Taylor Bros., Waynesville; farrowed June 20, 1881; sire, Chester White; dam, Chester White.

Barrow under 1 year—4 entries.

299—Tom, Chester White, bred and exhibited by J. A. Brown & Son, Decatur; farrowed April 29, 1882; sire, Good; dam, Lady Brown.

300—Dick, Victoria, bred and exhibited by Scheidt & Davis, Dyer, Ind.; farrowed December 28, 1881; sire, Victoria; dam, Victoria.

301—Tom, Victoria, bred and exhibited by Scheidt & Davis, Dyer, Ind.; farrowed December 28, 1881; sire, Victoria; dam, Victoria.

302—Harry, Victoria, bred and exhibited by Scheidt & Davis, Dyer, Ind.; farrowed February 1, 1882; sire, Victoria; dam, Victoria.

Sow 1 and under 2 years—4 entries.

303—Lady Brown, Chester White, bred and exhibited by J. A. Brown & Son, Decatur; farrowed April 30, 1881; sire, Jack; dam, Princess

304—Fanny, Victoria, bred and exhibited by Scheidt & Davis, Dyer, Ind.; farrowed July 8, 1881; sire, Victoria; dam, Victoria.

305—Beauty, Chester White, exhibited by Taylor Bros., Waynesville; bred by J. A. Brown & Son, Decatur; farrowed April 28, 1881; sire, Chester White; dam Chester White.

306—Nancy, Chester White, exhibited by Taylor Bros., Waynesville; bred by J. A. Brown & Son, Decatur; farrowed April 28, 1881; sire, Chester White; dam, Chester White.

Sow under 1 year—3 entries.

307—Folly, Chester White, bred and exhibited by J. A. Brown & Son, Decatur; farrowed April 29, 1882; sire, Good; dam, Lady Brown.

308—Fancy Bird, Victoria, bred and exhibited by Scheidt & Davis, Dyer, Ind.; farrowed May 25, 1882; sire, Victoria; dam, Victoria.

309—Minnie, Chester White, exhibited by Taylor Bros., Waynesville; bred by John W. Boston, Jacksonville; farrowed November 18, 1881; sire, Chester White; dam, Chester White.

LOT 27—ESSEX.

Barrow 1 and under 2 years—4 entries.

310—Joshua, bred and exhibited by Taylor Bros., Waynesville; farrowed May 15, 1881; sire, Essex; dam, Essex.

311—Frank, bred and exhibited by Taylor Bros., Waynesville; farrowed May 15, 1881; sire, Essex; dam, Essex.

312—Walter, bred and exhibited by Frank Willson, Jackson, Mich.; farrowed July 5, 1881; sire, Essex; dam, Essex.

313—Major, bred and exhibited by Frank Willson, Jackson, Mich.; farrowed September 2, 1881; sire, Essex; dam, Essex.

Barrow under 1 year—4 entries.

314—Philip, bred and exhibited by Taylor Bros., Waynesville; farrowed March 1, 1882; sire, Essex; dam, Essex

315—Rob, bred and exhibited by Taylor Bros., Waynesville; farrowed March 1, 1882; sire, Essex; dam, Essex.

316—Ted, bred and exhibited by Frank Willson, Jackson, Mich.; farrowed May 11, 1882; sire, Essex; dam, Essex.

317—Tom, bred and exhibited by Frank Willson, Jackson, Mich.; farrowed May 11, 1882; sire, Essex; dam, Essex.

Sow 1 and under 2 years—2 entries.

318—Sarah, bred and exhibited by Taylor Bros., Waynesville; farrowed September 20, 1881; sire, Essex; dam, Essex.

319—Sallie, bred and exhibited by Taylor Bros., Waynesville; farrowed June 1, 1881; sire, Essex; dam, Essex.

Sow under 1 year—4 entries.

320—Rosy, bred and exhibited by Taylor Bros., Waynesville; farrowed March 1, 1882; sire, Essex; dam, Essex.

321—Dolly, bred and exhibited by Taylor Bros., Waynesville; farrowed March 1, 1882; sire, Essex; dam, Essex.

322—Mate, bred and exhibited by Frank Willson, Jackson, Mich.; farrowed February 26, 1882; sire, Essex; dam, Essex.

323—Mary, bred and exhibited by Frank Willson, Jackson, Mich.; farrowed March 18, 1882; sire, Essex; dam, Essex.

LOT 28—GRADES OR CROSSES.

Barrow 1 and under 2 years—8 entries.

324—Bouncer, grade Victoria, bred and exhibited by Scheidt & Davis, Dyer, Ind.; farrowed May 25, 1881; sire, Victoria; dam, grade Poland.

325—Joe, grade Victoria, bred and exhibited by Scheidt & Davis, Dyer, Ind.; farrowed July 1, 1881; sire, Victoria; dam, Berkshire.

326—Jake, grade Berkshire, bred and exhibited by Taylor Bros., Waynesville; farrowed June 4, 1881; sire, Berkshire; dam, Poland.

327—Tom, Jersey Red, bred and exhibited by Thos. Bennett, Rossville; farrowed May 11, 1881; sire, Red Chief; dam, Hazel Splitter.

328—Dick, Jersey Red, bred and exhibited by Thos. Bennett, Rossville; farrowed May 11, 1881; sire, Red Chief; dam, Hazel Splitter.

329—Harry, Jersey Red, bred and exhibited by Thos. Bennett, Rossville; farrowed May 11, 1881; sire, Red Chief; dam, Hazel Splitter.

330—Joseph, grade Berkshire, exhibited by Taylor Bros., Waynesville, bred by J. H. Gambrel, Atlanta; farrowed May 28, 1881; sire, Berkshire; dam, Poland.

331—Jerry, grade Berkshire, exhibited by Taylor Bros., Waynesville, bred by J. H. Gambrel, Atlanta; farrowed June 10, 1881; sire, Berkshire; dam, Poland.

Barrow under 1 year—3 entries.

332—Fatty, grade Victoria, bred and exhibited by Scheidt & Davis, Dyer, Ind.; farrowed December 1, 1881; sire, Victoria; dam, grade Poland.

333—Muskogee 2d, Jersey Red, bred and exhibited by Thos. Bennett, Rossville; farrowed January 28, 1882; sire, Tecumseh; dam, Beauty.

334—Muskogee 3d, Jersey Red, bred and exhibited by Thos. Bennett, Rossville; farrowed February 26, 1882; sire, Tecumseh; dam, None Such.

Sow 1 and under 2 years—2 entries.

335—Mary, Jersey Red, bred and exhibited by Thos. Bennett, Rossville; farrowed May 11, 1881; sire, Red Chief; dam, Hazel Splitter.

336—Queen Anna, grade Berkshire, exhibited by Taylor Bros., Waynesville; bred by J. H. Gambrel, Atlanta; farrowed May 28, 1881; sire, Berkshire; dam, Poland.

Sow under 1 year—1 entry.

337—Guthrie Queen, Jersey Red, bred and exhibited by Phil. D. Miller & Sons, Panora, Ia.; farrowed March 29, 1882; sire, Jersey Red; dam, Jersey Red.

LOT 29—SWEEPSTAKES.

Barrow 1 and under 2 years—23 entries.

338—Leon, Jersey Red, bred and exhibited by G. W. Stoner, La Place; farrowed September 25, 1881; sire, Indian Chief; dam, Pearl.

339—Giant, Jersey Red, bred and exhibited by G. W. Stoner, LaPlace; farrowed July 1, 1881; sire, Indian Chief; dam Valleria.

340—Larder, Jersey Red, bred and exhibited by G. W. Stoner, LaPlace; farrowed September 25, 1881; sire, Indian Chief; dam, Pearl.

Sow under 1 year—9 entries.

341—Peerless, Jersey Red, bred and exhibited by G. W. Stoner, LaPlace; farrowed March 12, 1882; sire, Indian Chief; dam, Valleria.

LOT 31—HEAVIEST FAT HOG.

Open to all.

Heaviest Barrow or Sow, any age—5 entries.

342—Emma 7th, Berkshire, exhibited by Taylor Bros., Waynesville; bred by A. Ware, Washington, O.; farrowed June 4, 1878; sire, Duke of Glendale 2461; dam, Emma 5th 4004.

LOT 32—FAT BARROWS.

Lot of 10 Fat Barrows, 1 and under 2 years—8 entries.

343—Bob, Chester White, bred and exhibited by Taylor Bros., Waynesville; farrowed July 1. 1881; sire, Chester White; dam, Chester White.

344—Bob, Jersey Red, bred and exhibited by G. W. Stoner, LaPlace; farrowed September 25, 1881; sire, Indian Chief; dam, Pearl.

345—Goodman, Jersey Red, bred and exhibited by G. W. Stoner, LaPlace; farrowed September 25, 1881; sire, Indian Chief; dam, Pearl.

346—Fulton, Jersey Red, bred and exhibited by G. W. Stoner, LaPlace; farrowed September 25. 1881: sire, Indian Chief; dam, Pearl,

347—Cardinal, Jersey Red, bred and exhibited by G. W. Stoner, LaPlace; farrowed September 1, 1881; sire, Indian Chief; dam, Lady Flora.

348—Tom, Jersey Red, bred and exhibited by G. W. Stoner, LaPlace; farrowed May 11, 1881; sire, Red Chief; dam. Hazel Splitter.

349—Rustic, Jersey Red, bred and exhibited by G. W. Stoner, LaPlace; farrowed May 4, 1881; sire, Kentucky Prince; dam, Regina.

350—Planter, Jersey Red, bred and exhibited by G. W. Stoner, LaPlace; farrowed May 10, 1881; sire, Kentucky Prince; dam, Lena.

CATALOGUE- CLASS A—CATTLE.

W. M. SM TH, Superintendent.

No. Stall	Name and Postoffice of Exhibiter.	Date of birth.		Age, in days	Weight Nov. 15, 1882	Average gain per day, in pounds, since birth	Name of Animal.	Breed.	Color.
1	M. H. Cochrane, Compton, Canada	May	25, '77	1,999	......	......	Vine II. of Skene 3329	Polled Angus	Black
2	" " "	Oct,	20, '79	1,121	1,765	1.57	Sir Richard	Hereford	Red
3	H. B. Varnum, Marshalltown, Iowa	Nov.	19, '76	2,186	2,715	1 24	King David	Grade Shorthorn	White
4	C. Dodge & Son, New South Lyme, Ohio	Jan.	7, '78	1,772	2,765	1.56	Duke	Shorthorn	Red
5	" " " " "	Jan.	7, '78	1,772	2,485	1.40	Dandy	"	Red
6	" " " " "	Apr.	8, '79	1,316	1,840	1 40	Ohio I	"	Roan
7	" " " " "	Apr.	2, '79	1,322	1,910	1 44	Ohio II	"	Red
8	" " " " "	May	23, '78	1,636	1,815	1.11	Ohio Belle	Grade Shorthorn	Roan
9	John B. Sherman, Stock Yards	Nov.	21, '78	1,454	2,360	1 62	Corporal	Shorthorn	Red
10	" " "	June	15, '78	1,613	2,535	1.57	Jim Blaine	Grade Shorthorn	Red
11	" " "	Apr.	22, '78	1,667	2,520	1 51	Bell Duke	Shorthorn	Red
12	" " "	Feb.	13, '77	2,100	2,715	1 29	Booth	"	Red and White.
13	" " "	Apr.	8, '76	2,411	2,782	1.15	Eddy Morris	"	Red
14	" " "	Apr.	15, '75	2,769	3,055	1.10	Tim	Grade Shorthorn	Red
15	H. & I. Groff, Elmira, Canada	May	27, '80	902	1,740	1 93	Young Aberdeen [ton	" "	Red and White.
16	Canada West Farm Stock Association, Brantford, Can.	Feb.	8, '81	645	1,620	2 51	Clarence Kirkleving-	Shorthorn	White
17	H. & I. Groff, Elmira, Canada	May	29, '79	1,265	2 400	1 90	Canadian Champion	Grade Shorthorn	Roan
18	" " " "	Apr.	19, '79	1,305	2,535	1.94	King of the West	Shorthorn	White
19	J. H. Potts & Son, Jacksonville, Illinois	Apr.	28, '79	1,296	2,115	1 63	Thad. Stevens II	Grade Shorthorn	Roan
20	" " " "	Apr.	25, '79	1,299	2,060	1 58	Dwight	Shorthorn	Roan
21	" " " "	Nov.	15, '79	1,095	1,985	1.81	Major	Grade Shorthorn	Roan
22	" " " "	Nov.	30, '80	715	1,600	2.23	Red Major	" "	Red
23	" " " "	Jan.	10, '79	1,404	1,865	1 32	Acorn 6th	Shorthorn	Red
24	Pickrell, Thomas & Smith, Harristown, Illinois	July	9, '78	1,589	1,800	1.13	Rosa Bell	"	Red and White.
25	David Grant, Petersburg, Illinois	June	7, '78	1,621	1,685	1.04	Lady Garfield	"	Red
25	S. E. Prather, Springfield, Illinois	Apr.	23, '76	2,396	1,760	0 73	Lilly Dale 2d	"	Roan
26	Geo. B. Welsh, Tallula, Illinois	Apr.	18, '80	941	1,655	1.76	Sandy	Grade Shorthorn	Roan
27	" " " "	Apr.	26, '80	933	1,825	1 96	Jim Blaine..... [dale	" "	Roan
28	A. M. Winslow Sons, Kankakee, Illinois	Dec.	16, '77	1,794	1,510	0.84	4th Princess Thorn-	Shorthorn	Roan
29	Cobb & Phillips, Kankakee, Illinois	Oct.	27, '81	384	1,140	2.97	Cassius 5th	"	Roan
29	" " " "	Sep.	29, '81	412	1,105	2.68	Cassius 4th	"	Roan
30	......	......	......	......	......	......	......	......	......
31	M. H. Cochrane, Compton, Canada	Mch.	30, '80	960	......	......	Judge....... [dallach	Polled Angus Bull	Black
32	" " " "	Jan.	2, '81	682	......	......	Endymion of Ballen-	" " "	Black

33	" " " "	Mch.	26, '81	599			Grace III	Polled Angus Heifer	Black
33	" " " "	Jan.	10, '81	674			Marjory III, 4629	" " "	Black
34	" " " "								
35	Fowler & Van Natta, Fowler, Ind	Nov.	22, '77	1,818	1,515	0.85	Bright Spot	Hereford	Red
36	" " "	May	1, '81	563	1,225	2 17	Curly Jim	Grade Hereford	Roan
37	" " "	May	3, '81	561	1,250	2.23	Squire	"	Roan
38	" " "	April	20, '81	574	1,410	2.45	Benton's Champion	"	Red
39	" " "	Nov.	5, '80	740			Anxiety V	Hereford	Red
40									
41									
42	Canada West Farm Stock Association. Brantford, Can	March	29, '77	2,056	2,055	1.00	Royal Charmer 6th	Shorthorn	Roan
43	G. S. Burleigh, Mechanicsville, Ia	June	15, '79	1,248	1,620	1.30	Broad Horns	Grade Hereford	Red
44	" "	Sep.	4, '81	437	830	1.90	Hattie	"	Red
45	" "	Oct.	31, '79	1,110	1,805	1.62	Jones	"	Red
46	Stone & Loake, Stonington	July	28, '81	475	1,025	2 16	Experiment	"	Red roan
47	Thos. Foster, Flint, Mich	June	24, '79	1,239	1,865	1 50	Duke	"	Red
48	" "	June	27, '79	1,236	1,950	1.58	Diamond	"	Red
49									
50	C. L. Blanchard, Morenci, Mich	March	5, '81	620	1,390	2.24	Drift	Grade Shorthorn	White
51	C. M. Culbertson, Chicago	May	9, '79	1,285	1,960	1 55	Solomon	Grade Hereford	Red
52	" "	Dec.	30, '78	1,415	1,845	1 30	Spot Face	"	Red
53	" "	Nov.	25, '80	720	1,475	2.05	White Back	"	Red
53	" "	Dec.	19, '79	1,061	1,462	1.38	Curly Coat	"	Red
54	" "	Dec.	30, '79	1,050	1,650	1 57	Roan Boy	"	Roan
55	" "						Rosina	Hereford Heifer	Red
55	" "						Hawthorn	"	Red
56	" "						Ethel	"	Red
56	" "						Beatrice	"	Red
58	Earl & Stuart, Lafayette, Ind	Dec.	3, '79	1,077	1,940	1 80	Wabash	Hereford	Red
59	" "						Sir Bartle Frere	Hereford Bull	Red
60	" "						Garfield	"	Red
61	" "						Henrietta	Hereford Heifer	Red
62	" "						Henrietta II	"	Red
62	" "						Venus II	"	Red
63	O. Terrell, Chicago						Amos	Hereford Bull	Red
63	" "						Seabre	"	Red
64	Geo. Leigh, Beecher	Oct.	26, '80	750			Bristol	"	Red
65	" "	April	15, '80	944			Passport	"	Red
66	" "						Royal 14	"	Red
67	T. L. Miller Co., Beecher	March	25, '79	1,330	2,330	1 75	Dauphin 18	"	Red
68	" "	Sept.	4, '79	1,167	2,060	1.76	Winter De Cote	"	Red
69	" "	Feb	22, '73	3,551	2,030	0.57	Success	"	Red
70	" "	Jan.	31, '82	288			Vic.	Hereford Heifer	Red
70	" "	April	5, '82	224			Little Gem's Success	"	Red
71	" "	Feb.	18, '82	270			Winter King	Hereford Bull	Red
71	" "	Jan.	17, '82	302			Favorite Lad	"	Red
72	" "	March	5, '82	255			Centurion	"	Red
72	" "	March	3, '82	257			Field Marshal	"	Red
73	" "	Dec.	1, '81	349			Florist	"	Red
73	" "	Nov.	9, '81	371			Sir Baltimore	"	Red
74	" "	Dec.	1, '80	714	1,380	1.93	Sir Thomas	Grade Hereford	Red
74	" "	April	8, '81	586			Sea King	Hereford Bull.	Red

Class A—Cattle—Continued.

No. stall	Name and Postoffice of Exhibiter.	Date of birth.		Age in days	Weight Nov. 15, 1882	Average gain per day in lbs. since birth	Name of Animal.	Breed.	Color.
75	T. L. Miller Co., Beecher	Jan.	26, '72	3,943	1,800	0.45	Prin. Alice Maud 1029	Hereford	Red
76	" "	May	15, '81	549	1,232	2.24	St. Paul	Grade Hereford	Red
76	" "	June	9, '81	524	1,155	2.20	Eighty-one	"	Red
77	" "	Oct.	23, '80	753	1,310	1 74	Bertie	Hereford	Red
77	" "	Nov.	1, '80	744	1,435	1.93	Bachelor	Grade Hereford	Red
78	" "	March	20, '80	970	1,655	1.71	King William	"	Red
79	" "	March	12, '80	978	1,720	1.75	Wallace	"	Red
80	" "	Mch.	18, '80	972	1,680	1.73	Highland Lad	Grade Hereford	Red
81	" "	Mch.	24, '80	966	1,815	1.88	Beecher	"	Red
82	" "	July	2, '80	866	1,705	1 97	Conqueror II.	"	Red
83	" "	Feb.	5, '79	1,378	1,870	1.35	Pythias	"	Red
84	" "	Feb.	28, '79	1,355	1,990	1.46	Damon	"	Red
85	" "	May	15, '79	1,279	1,980	1 55	Barnum	Grade Hereford	Red
86	" "	May	15, '79	1,279	1,920	1.50	Jumbo	"	Red
87	" "	May	16, '79	1,278	1,710	1.34	Abbey	"	Roan
88	" "								
89	" "	Feb.	2, '79	1,381	1,450	1.05	Buck	Grade Hereford	Red
89	" "	Feb.	12, '79	1,371	1,600	1.16	Bright	"	Red
90	" "	Jan.	29, '79	1,385	1,560	1.12	Prince	"	Red
91	" "	April	7, '77	2,047			Highland Queen	Hereford Cow	Red
92	" "	Feb.	7, '78	1,741			Nightingale	"	Red
92	" "	May	4, '77	2,020			Charity	"	Red
93	" "	April	18, '82	211			Betty Taylor	Hereford Heifer	Red
93	" "	Nov.	14, '77	1,826			Beatrice	Hereford Cow	Red
94	T. E. Miller, Beecher	Dec.	4, '81	346			Leominster 5846	Hereford	Red
94	" "	Dec.	4, '81	346			Henry Clay 5845	"	Red
95	" "	May	25, '80	904	1,685	1.86	Irvington Wilton 4056	"	Red
95	" "	March	27, '81	598			Jessie M. 4025	"	Red
96	" "	April	20, '81	574			Priceless 6380	"	Red
96	" "	April	20, '81	574			Patty 3761	"	Red
97	" "	Feb.	28, '81	625			Frosty 4022	"	Red
97	" "	July	23, '81	480			Clover Cherry 3762	"	Red
98	" "	Oct.	31, '81	380			Gold Coin 5841	"	Red
98	" "	Oct.	17, '81	394			Coupon 5838	"	Red
99	Thos. Clark, Beecher	April	4, '82	225			Nip	Grade Hereford	Red
99	" "	May	15, '82	184			Tuck	"	Red

100	H Norris & Sons, Aurora	Feb.	24, '80	994	1,750	1.76	Jerry	"	Red
101	" "	March	18, '80	972	1,735	1.78	Jay	"	Red
102	D. M. Moninger, Galvin, Iowa	Dec.	7, '79	1,073	2,200	2.05	Champion	Grade Shorthorn	Red
103	" "	Sept.	30, '80	776	1,585	2.04	Harry West	"	Red
104	" "	Dec.	28, '79	1,052	1,820	1.73	Knight	"	Red
105	" "	Dec.	25, '79	1,055	1,940	1 81	Porter	"	Red
106	" "	April	15, '77	2,039	1,995	0.97	Nellie	"	Red
107	" "	Dec.	30, '79	1,050	1,880	1.79	Smith	"	Red
108	" "	Feb.	1, '80	1,017	1,875	1.84	Shaffer	"	Red
109	" "	Jan.	15, '80	1,034	1,905	1.84	Col. Scott	"	Red
110	" "	Feb.	27, '80	991	1,805	1.82	Clarkson	"	Red
111	" "	Feb.	7, '80	1,011	1,850	1.83	Grinnell	"	Red
112	" "	Nov.	30, '80	715	1,655	2.31	Champion of Iowa	"	Red
113	" "	Aug.	28, '79	1,174	1,945	1 65	Tom Brown	"	Red
114	" "	Jan.	10, '79	1,404	2,065	1.47	Loring	"	Red
115	John D. Gillett, Elkhart	June	15, '78	1,613	2,565	1.59	McMullen	"	Red
116	" "	May	15, '78	1,644	1,880	1.14	Lady Peerless	"	Red
118	D. M. Moninger, Galvin Iowa	Nov.	30, '79	1,080	1,785	1.65	Bennett	"	Red
119	" "	Dec.	25, '78	1,420	1,970	1.38	Dobbin	"	Red
120	" "	May	20, '79	1,274	1,940	1.52	Kimball	"	White
121	" "	Dec.	30, '78	1,415	2,030	1.43	Ward	"	Red
122	" "	June	30, '79	1,233	2,125	1 72	Wick	"	Roan
123									
124	" "	July	15, '79	1,218	2,135	1 75	Sherman	Grade Shorthorn	Roan
125	" "	April	30, '79	1,294	2,005	1 55	Barnes	"	Roan
126	Jno. D. Gillett, Elkhart	Oct.	5, '79	1,136	2,060	1.81	Red Dick	"	Red
127	" "	May	31, '72	3,818	2,100	0.55	Beauty's Maid	Shorthorn	Roan
128	J. R. Price, Williamsville		1882					Gr. Hereford, 2 calves	
129	" "		1882					" "	
130	" "		1882					" "	
131	J. D. Gillett, Elkhart	May	25, '81	539	1,125	2 08	G. Adams	Grade Shorthorn	Red
	" "	June	2, '81	531	1,060	1.99	Truman	"	Red
	" "	June	16, '81	517	1,150	2.22	Hoxie	"	Red
	" "	Aug.	20, '81	452	1,055	2.33	Cherry	"	Red
	" "	May	20, '81	544	1,110	2.04	Doc Woods	"	Roan
	" "	Aug.	24, '81	448	1,050	2 34	Waixel, Jr.	"	Red
	" "	July	3, '81	500	990	1 98	Chub	"	Red
132	" "	Aug.	15, '79	1,187	2,100	1 77	Chub	"	Roan
133	" "	Sept.	15, '79	1,156	2,160	1.87	Chance	"	Roan
134	" "	Feb.	15, '79	1,368	2,105	1 53	Clincher	"	Roan
135	" "	Aug.	17, '79	1,185	2,080	1.75	Comet	"	Roan
136	" "	May	15, '79	1,279	2,060	1 61	Storm	"	Red
137	" "	May	15, '79	1,279	2,065	1 61	Arthur	"	Red
138	" "	Mar.	15, '79	1,340	2,180	1 62	Oakley	"	Red
139	" "	July	25, '79	1,208	1,885	1 56	Capt. Jack	"	Red
140	" "	May	15, '79	1,279	2,090	1.63	Garfield	"	Red
141	" "	June	15, '79	1,248	2,235	1.79	John Sherman	"	Red
142	" "	Feb.	15, '79	1,368	2,250	1 64	Cash	"	Red
143	" "	Apr.	10, '79	1,314	2,045	1.55	Wild Indian	Grade Shorthorn	Red
144	" "	Sept.	1, '79	1,170	2,045	1 75	Nels. Morris	"	Red
145	" "	June	15, '79	1,248	2,320	1.86	Wild Bill	"	Red
146	" "	July	14, '79	1,219	2,300	1 88	Blood	"	Red

Class A—Cattle—Continued.

No. stall	Name and Postoffice of Exhibiter.	Date of birth.	Age in days	Weight Nov. 15, 1882	Average gain per day in lbs. since birth	Name of Animal.	Breed.	Color.
147	J. D. Gillett, Elkhart	Feb. 26, '79	1,357	2,195	1.62	E. S. Wood	Grade Shorthorn	Red
148	" "	July 10, '80	858	2,220	2 59	Mammoth	"	Red
149	" "	Mar. 1, '80	989	1,980	2.00	Blackstone	"	Red
150	" "	May 2, '80	927	1,950	2.10	Dick	"	Roan
151	" "	Mar. 10, '80	980	1,775	1 81	Bud	"	Roan
152	" "	Apr. 10, '80	949	1,700	1 80	Jesse	"	Red
153	" "	Apr. 15, '80	944	1,945	2 06	Justin	"	Red
154	" "	May 1, '80	928	1,795	1 93	Down Horn	"	Red and white.
155	" "	Apr. 25, '80	934	1,745	1 86	Baldwin	"	Red
156	" "	May 1, '80	928	1,555	1.67	Houston	"	Red and white.
157	" "	June 11, '80	887	1,595	1.80	Tip Top	"	Red
158	" "	Jan. 2, '81	682	1,430	2.10	T. Eastman	"	Red
159	" "	May 15, '81	549	1,240	2 26	J. Adams	"	Red
160	" "	June 10, '81	523	1,270	2.42	Conover	"	Red and white.
161	" "	Apr. 10, '81	584	1,195	2 05	J. Wood	"	Red
162	" "	Aug. 18, '81	454	1,230	2 70	Waixel	"	Red
163	" "	Mar. 10, '81	615	1,070	1 74	The Deacon	"	Red
164	S. Croft & Bro., Wenona					Twilight	Shorthorn Bull	Red
165	" "	Dec. 1, '76	2.174	1,690	0 77	Miami of Redwood	Shorthorn	Red
166	A. A. Crane & Son, Osco	Mar. 10, '81	615	1,120	1 82	Mason	Grade Hereford	Red
167	" "	Feb. 1, '81	652	1,325	2 03	Ohio	"	Red
168	" "	Dec. 18, '80	697	1,330	1.90	My Maryland 4721	Hereford	Red
169	" "	Jan. 17, '80	1,032	1,630	1 58	Excelsior 4720	"	Red
170	W. M'O. Campbell. Lamar, Iowa	July 15, '80	853			Baron Carwardine	Polled Angus Bull	
171	" "	July 15, '80	853			Duchess 8th	" Heifer.	
172	" "	1882				Duchess 9th	" "	
173	" "	Dec. 3, '78	1.442			Sassenach	" Bull	
174								
175	J. H. Truman, Chicago	May 5, 81	559			Lord Leroy	Shorthorn	Red
176	" "	May 7, '81	557			Atlantic Duke	"	Red Rn.
177	" "	July 31, '81	472			Wiley Prince	"	Red.
178								
179								
180								
181								
182								

183									
184									
185									
186	J. H. Potts & Son, Jacksonville	Jan.	2, '82	317	750	2 36	Mignonette of Oakl'd	Shorthorn	Red
186	" "	March	29, '81	596	1,075	1 80	Harmony II	"	Red
187	" "	Nov.	15, 76	2,190	1,650	0 75	Mignonette	"	Red
187	" "	Oct.	5, '78	1,501	1,810	1.20	Duchess of Oakland	"	Red
188	" "	Nov.	19, '81	361	760	2 11	Josie 7th	"	Red
188	" "	May	31, '76	2,358	1,6[illegible]	0.71	Josie 3d	"	Red
189	" "	Jan.	11, '81	673	1,225	1 82	Fanny Airdrie 3d	"	Red
189	" "	Oct.	13, '80	763	1,125	1.47	Cherry Night 8th	"	Red
190	" "	Aug.	28, '76	2,269	1,400	0 61	Mary Geneva	"	Red
190	" "	April	21, '81	573	980	1 71	Waterloo I of O'kla'd	"	Red
191	" "	Jan.	11, '73	3,593	1,675	0.46	Caroline 10th	"	Red
191	" "	March	18, '81	607	1,000	1 64	Josie 6th	"	Red
192	" "	Jan.	2, '81	682	1,225	1.79	Louisa of Oakland	"	Red
192	" "	July	30, '76	2,298	1 525	0 66	3d Maid of Seaham	"	Red
193	" "	Oct.	16, '81	395	765	1.94	TrueLove of O'kl'd 2d	"	Red
193	" "	Dec.	4, '81	346	780	2 25	Fanny Airdrie 5th	"	Red
193	" "	Nov.	20, '81	360	740	2.05	Jub. Guye'ne of O 2d	"	Red Rn
194	" "	Sept.	10, '79	1,161	1,300	1 12	Nannie Miller 8th	"	Red
194	" "	April	21, '74	3,128	1,485	0 47	Imp. Geraldine	"	Roan
195	" "	March	4, '78	1,716	2,100	1.22	Master Richmond	"	Red
196	" "								
197	" "	Jan.	2, '79	1,412	2,475	1 75	Royal Commander	Shorthorn	Red
198	" "	March	30, '81	595	1,350	2 27	Royal Co'mander 5th	"	Red
198	" "	Jan.	6, '82	313	860	2 74	Charlotte's Duke	"	Red
199	" "	Dec.	15, '80	700	1,650	2 36	RoyalCommander 3d	"	Red
199	" "	Oct.	22, '81	389	805	2 07	Emma's Mas. Ri'hm'd	"	Red
200	" "	Dec.	22, '81	328	825	2 51	Dan Moy	"	Red
200	" "	Nov.	24, '81	356	815	2 29	Prince of Oakland	"	Red
201	" "	Oct.	19, '81	392	985	2.51	Orange Boy	"	R. & W.
201	" "	Feb.	10, '82	278	775	2 78	Seaham Lad	"	Red
202	Allen Varner, Indianola	March	16, '77	2 069	2,850	1 38	Snow Drift	Grade Shorthorn	White
203									
215	T. L. Miller Co , Beecher	Jan.	15, '80	1,034	1,475	1.42	Napoleon	Grade Hereford	Red
216	" "	Jan.	16, '80	1,033	1,395	1 35	Murat	" "	Red
217	" "	Jan.	17, '80	1 032	1,355	1.31	Ney	" "	Red
218	" "	April	10, '80	'49	1,245	1.31	Marion	" "	Roan
219	" "	March	15, '80	975	1,470	1 51	Ohio Chief	" "	Red
220	" "				1,437		Douglas	" "	
221	J. R. Price, Williamsville		1882				Hereford Calves		
222	" "		1882				" "		
223	" "		1882						
224	T. L. Miller Co., Beecher	March	23, '80	967	1,290	1 33	Soult	Grade Hereford	Red
225	" "	July	13, '79	1,220	1,555	1 27	Crawford	" "	Red
226	" "	April	4, '80	955	1,200	1.25	William	" "	Red

TABLE OF MEASUREMENTS, ETC.

No. of Animal	Class, Lot and Name of Animal.	MEASUREMENTS.						HEIGHT FROM GROUND.								Depth from top line to lower shoulder point		Thickness through the crop		Length of back from top of shoulder to loin		Width across the loins		Length of quarter from loin to rump.		Depth from loin to hock		Girth of paunch (middle)		Girth of throat latch.	
								Top line.				Bot.line.																			
		Length of carcass		Hearthgirth		Flank girth		Shouldr.		Hip		Fore flank		Flank																	
		Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft.	In	Ft	In	Ft	In.	Ft	In	Ft.	In.	Ft.	In	Ft	In.	Ft.	In.
	CLASS A—CATTLE.																														
	LOT 1—SHORTHORNS.																														
	Steer or Spayed Heifer 3 and under 4 years.																														
	FIRST PREMIUM NO. 1—SECOND PREMIUM NO. 2—THIRD PREMIUM NO. 3.																														
1	King of the West	7	..	8	8	8	7	4	11	4	11	1	10	2	5	3	2	2	4	2	3	2	5	2	7	4	4	9	6	3	8
2	Dwight	7	.	8	2	8	3	4	8	4	10	4	11	2	5	3	3	2	4	2	6	2	4	2	2	3	11	9	....	3	9
3	Ohio 1st	7	.	7	10	7	10	4	10	4	11	2	.	2	6	3	....	2	2	2	4	2	3	2	3	4	....	9	1	3	3
4	Ohio 2d	6	7	7	9	8		4	8	4	10	1	11	2	5	2	6	2	2	2	3	2	....	2	1	3	8	8	9	3	4
5	Corporal	11	4	8	8	8	6	5	2	5	1	2	2	2	8	3	2	2	4	2	6	2	5	2	4	4	3	9	7	3	7
	Steer or Spayed Heifer 1 and under 2 years.																														
	FIRST PREMIUM NO. 8—SECOND PREMIUM NO. 6—THIRD PREMIUM NO. 7.																														
6	Cassius 5th	6	.	6	3	6	10	4	3	4	5	2	1	2	5	2	7	1	9	2	...	1	10	1	11	3	4	7	1	3	2
7	Cassius 4th	5	10	6	3	6	6	4	1	4	3	1	10	2	3	2	7	1	10	1	10	1	9	1	11	3	2	7	3	2	10
8	Clarence Kirklevington	6	7	7	6	7	7	4	7	4	8	2	1	2	6	2	6	2	2	2	3	2	...	2	....	2	4	8	2	3	6

Cow, 3 years or over.

FIRST PREMIUM NO. 12—SECOND PREMIUM NO. 14—THIRD PREMIUM NO. 13.

9	Rosa Bell	6	10	7	9	7	10	4	5	4	7	1	9	2	1	2	11	2	2	2	2	2	4	2	5	4	2	9	....	3	2
10	Miami of Bedwood	7	..	7	8	7	11	4	7	4	7	1	10	2	4	3	2	2	1	2	1	2	4	2	3	3	7	8	9	2	11
11	Lady Garfield	6	11	7	9	7	11	4	7	4	8	2	..	2	3	3	2	2	3	2	1	2	3	2	5	3	10	8	7	3	2
12	Acorn 6th	7	..	7	9	8	5	4	5	4	7	1	10	2	.	3	....	2	1	2	4	2	5	2	3	4	....	8	9	3	4
13	Royal Charmer 6th	7	..	8	..	8	2	4	9	4	8	1	11	2	4	3	3	2	2	2	3	2	6	2	4	4	....	8	10	3	6
14	Lily Dale 2d	..	..	..	..	..	..	.	..		..		..	..	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
15	Beauty's Maid	7	5	8	1	8	2	4	9	4	10	1	11	2	2	3	....	2	2	2	6	2	3	2	5	3	10	9	5	3	6
16	4th Princess of Thorndale	..	..	..	..	..	..	.	..		..		..	..	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

LOT 2—HEREFORDS.

Steer or Spayed Heifer 3 and under 4 years.

FIRST PREMIUM—NO. 17.

17	Sir Richard	6	7	7	8	7	8	4	5	4	7	1	9	2	3	2	11	2	2	2	5	2	1	2	1	3	6	8	7	3	5

Steer or Spayed Heifer 2 and under 3 years.

FIRST PREMIUM NO. 18—SECOND PREMIUM NO. 19—THIRD PREMIUM, NO AWARD.

18	Wabash	6	3	8	1	7	10	4	7	4	7	1	10	2	3	3	1	2	3	2	2	2	2	2	3	3	10	9	3	3	5
19	Excelsior 4720	6	.	7	5	7	7	4	6	4	7	2	.	2	4	3	....	2	....	2	1	2	2	2	2	3	10	8	9	3	4
20	Bertie	5	9	6	9	6	10	4	2	4	4	1	11	2	2	2	8	1	10	1	10	1	11	2	1	3	4	7	10	3	2

Steer or Spayed Heifer 1 and under 2 years.

FIRST PREMIUM—NO. 21.

21	My Maryland 4721	6	1	6	8	7	..	4	3	4	6	2		2	4	2	9	1	10	2	1	1	11	2	3	3	8	7	7	3	3

Cow, 3 years or over.

FIRST PREMIUM NO 23—SECOND PREMIUM NO. 22.

22	Bright Spot	..	..	..	.	..			..	..	..					....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
23	Princess Alice Maud 1029	6	5	7	6	8	2	4	3	4	5	1	7	1	9	2	9	2	....	2	4	2	5	2	3	3	10	8	10	3	3

Table of Measurements, Etc.—Continued.

No. of Animal	Class, Lot and Name of Animal.	Measurements.						Height from Ground.								Depth from top line to lower shoulder point		Thickness through the crop		Length of back f'm top of shoulder to loin		Width across the loins		Length of quarter from loin to rump.		Depth from loin to hock		Girth of paunch (middle)		Girth of throat latch	
		Length of carcass		Heart girth.		Flank girth.		Top line.				Bot. line.																			
								Should'r		Hip.		Fore flank.		Flank.																	
		Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
	Lot 5—Grades or Crosses.																														
	Steer or Spayed Heifer 3 and under 4 years.																														
	FIRST PREMIUM NO. 31—SECOND PREMIUM NO. 47—THIRD PREMIUM NO. 26.																														
24	Broad Horns	6	11	7	5	7	6	4	7	4	9	2	.	2	6	3	2	2	1	2	5	2	....	2	5	3	11	8	..	3	5
25	Jones	6	3	7	10	8	3	4	5	4	5	1	11	2	1	3	....	2	2	2	....	2	3	2	2	3	11	8	9	3	4
26	Canadian Champion	7	4	8	10	8	8	5	..	5	1	2	1	2	5	3	4	2	6	2	1	2	5	2	5	4	3	9	5	3	7
27	Damon	6	10	7	10	8	1	4	8	4	8	1	11	2	3	3	....	2	1	2	4	2	2	2	2	3	10	8	10	3	7
28	Pythias	6	7	7	11	7	11	4	7	4	7	1	9	2	3	2	11	2	2	2	2	2	1	2	3	3	8	9	....	3	4
29	Thad. Stevens 2d	6	10	8	..	8	1	5	1	5	1	2	3	2	8	3	2	2	2	2	4	2	3	2	4	4	....	9	3	3	6
30	Loring	6	7	8	2	7	10	4	9	4	10	1	11	2	4	2	10	2	5	2	3	2	3	2	4	3	10	9	1	3	7
31	Tom Brown	6	9	8	..	8	2	4	7	4	8	2		2	4	2	11	2	4	2	1	2	2	2	4	4	1	9	2	3	6
32	Sherman	7		8	..	8	3	4	9	4	11	2	1	2	6	3	1	2	2	2	4	2	3	2	3	4	1	9	7	3	8
33	Spot Face	7	1	8	.	7	8	4	6	4	6	1	9	2		3	1	2	3	2	3	2	1	2	3	3	9	8	11	3	....
34	Duke	6	8	7	9	7	9	4	8	4	11	2	2	2	7	3	2	2	....	2	3	2	2	2	6	4	1	8	10	3	2
35	Diamond	7	1	8	.	8	2	4	9	4	11	2	.	2	6	3	...	2	2	2	2	2	2	2	6	4	2	8	10	3	5
36	Wild Indian	7	7	7	11	8	3	4	9	4	10	2	1	2	4	3	..	2	....	2	5	2	2	2	3	4	2	9	....	3	6
37	Comet	.	..				..	..	..	.			.			...	..	...	...	..	...	...	...	...	...	...	...	..	...	...	...
38	Clincher	7	3	8	9	8	3	4	10	5		2	.	2	5	3	3	2	4	2	2	2	5	2	6	4	2	9	5	3	8
39	Chance	6	9	8	4	8	4	4	11	5	.	1	10	2	4	3	....	2	....	2	4	2	2	2	4	3	11	9	4	3	8
40	Storm	7	.	8	2	8	.	4	9	4	10	2	.	2	7	3	2	2	2	2	7	2	1	2	2	3	10	9	1	3	5
41	Garfield	6	10	8	3	8	3	4	9	4	9	1	10	2	3	3	...	2	....	2	3	2	3	2	3	4	....	9	....	3	6
42	Arthur	6	10	8	3	7	10	4	8	4	9	2	..	2	4	3	...	2	5	2	5	2	2	2	1	3	11	9	.. .	3	6
43	John Sherman	7	3	8	5	8	2	4	9	4	10	1	11	2	3	3	2	2	2	2	5	2	2	2	3	3	10	9	2	3	5
44	Cash	7	5	8	4	8	10	4	10	5		2	1	2	6	3	3	2	4	2	3	2	3	2	4	3	11	9	8	3	10
45	Chub	7	.	8	3	8	1	4	10	4	10	2	1	2	6	2	9	2	1	2	2	2	5	2	4	3	10	9	3	3	9
46	Nels Morris	7	1	8	2	8	..	4	8	4	10	1	11	2	5	3	....	2	4	2	4	2	3	2	4	3	11	9	....	3	7
47	Major	6	8	8	1	8	3	4	10	5	.	2	1	2	6	3	2	2	1	2	1	2	3	2	4	4	....	8	10	3	8

Steer or Spayed Heifer 2 and under 3 years.

FIRST PREMIUM NO. 53—SECOND PREMIUM NO. 58—THIRD PREMIUM NO. 54.

48	Jim Blaine	6	3	7	11	8		4	11	4	11	2		2	6	3	....	2	....	2	1	2	2	2	3	4	1	8	5	3	2
49	Sandy	6	4	7	5	7	5	4	9	4	9	2		2	7	3	1	2	....	2	2	2	....	2	3	3	10	8	3	3	3
50	Jay	6	8	7	6	7	6	4	7	4	9	2		2	6	2	10	1	11	2	3	2	....	2	4	3	10	8	7	3	9
51	Jerry	7		7	4	7	5	4	10	4	11	2	2	2	7	2	10	2	....	2	3	2	....	2	3	3	10	8	4	2	6
52	Young Aberdeen	6	8	7	6	7	9	4	10	4	10	2	1	2	6	2	9	2	...	2	3	2	1	2	3	3	10	8	6	3	5
53	Grinnell	6	4	7	10	7	9	4	9	5		2		2	7	2	10	2	2	2	2	2	1	2	4	3	10	8	9	3	6
54	Col. Scott	7		7	10	8	11	4	10	5	..	2	1	2	7	3	....	2	3	2	..	2	3	2	5	3	11	9	...	3	5
55	Bennett	6	7	8		7	11	4	8	4	9	1	10	2	4	2	10	2	3	2	2	2	4	2	4	3	10	8	11	3	6
56	Harry West	6	5	7	4	7	4	4	6	4	8	1	11	2	5	2	10	1	10	2	2	2	....	2	....	3	5	8	6	3	3
57	Roan Boy	6	2	7	7	7	6	4	7	4	9	1	10	2	4	2	11	2	....	2	2	2	3	2	....	3	8	8	3	3	6
58	Mammoth	7	2	8	7	8	3	5	1	5		1	11	2	7	3	5	2	2	2	6	2	1	2	2	3	11	9	....	3	7
59	Jesse	6	10	8		8		4	11	4	11	2	3	2	8	2	11	2	....	2	4	2	1	2	2	3	11	8	8	3	8
60	Baldwin	6	10	7	7	7	5	4	10	4	10	2	2	2	6	3	...	2	1	2	4	2	....	2	3	3	10	8	8	3	4
61	Tip Top	6	6	7	6	7	2	4	6	4	8	2	.	2	6	2	9	1	11	2	1	2	....	2	1	3	7	8	2	3	5
62	Conqueror II	6	2	7	6	7	7	4	4	4	6	1	10	2	1	2	9	2	3	2	2	2	2	2	1	3	9	8	6	3	5
63	Beecher	6	7	7	5	7	10	4	8	4	10	2	1	2	3	2	11	2	....	2	4	2	1	2	4	3	10	8	7	3	9
64	Highland Lad	6	6	7	4	7	5	4	7	4	8	2	.	2	5	2	10	2	....	2	2	2	...	2	2	3	9	8	3	3	7
65	Wallace	6	6	7	6	7	8	4	7	4	8	2		2	4	2	11	2	....	2	2	2	2	2	2	3	10	8	5	3	6
66	King William	6	7	7	3	7	1	4	6	4	7	2		2	5	2	9	2	....	2	3	2	1	2	2	3	9	8	3	3	5

Steer or Spayed Heifer 1 and under 2 years.

FIRST PREMIUM NO. 72—SECOND PREMIUM NO. 67—THIRD PREMIUM NO. 75.

67	Benton's Champion	6	3	6	9	7	.	4	6	4	6	2		2	4	2	8	1	11	2	2	2	....	2	1	3	9	7	10	3	4
68	Squire	6	2	6	7	6	8	4	3	4	4	2	1	2	4	2	7	1	10	1	10	2	....	2	...	3	3	7	9	3	2
69	Curley Jim	6	3	6	7	6	8	4	4	4	5	2		2	5	2	8	2	...	2	....	2	....	2	1	3	4	7	5	3	....
70	Ohio	6	..	6	8	6	6	4	2	4	4	1	9	2	4	2	8	1	10	2	2	1	11	2	2	3	6	7	9	2	11
71	Mason	5	11	6	3	6	3	4	2	4	4	2		2	6	2	6	1	9	2	1	1	9	2	1	3	4	7	3	3	1
72	Red Major	6	4	7	5	7	7	4	7	4	8	2		2	4	3	9	2	2	2	1	2	1	2	1	3	9	8	4	3	4
73	Experiment	5	9	6	2	6	2	4	1	4	-	2	1	2	4	2	7	1	9	1	11	1	9	2	1	3	5	6	11	2	10
74	Drift	6	6	6	9	7		4	8	4	9	2	2	2	7	2	4	1	6	2	2	1	10	2	2	3	8	8	1	3	1
75	White Back	6	6	6	.	7		4	4	4	5	1	10	2	3	2	9	2	...	2	2	2	....	2	3	3	6	8	....	3	3
76	Champion of Iowa	6	4	7	5	7	7	4	9	4	9	2	1	2	5	2	9	2	....	2	1	2	1	2	4	3	11	8	6	3	4
77	T. Eastman	6	4	6	10	6	9	4	7	4	9	2	2	2	6	2	6	1	8	2	4	1	10	2	3	3	6	7	10	3	....
78	Waixel	6	..	6	1	6	.	4	2	4	5	2	2	2	6	2	4	2	....	2	1	1	9	1	11	3	3	6	10	3	....
79	J. Adams	6	5	6	5	6	9	4	3	4	6	2		2	5	2	5	1	11	2	3	1	10	2	....	3	3	7	5	3	2
80	Conover	6	4	6	6	6	8	4	4	4	6	1	11	2	4	2	6	1	10	2	...	1	10	1	11	3	5	7	7	3	2
81	Sir Thomas	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
82	St. Paul	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
83	Eighty-One	6	3	6	3	6	5	4	.	4	1	1	10	2	3	2	5	1	9		...	1	11	2	....	3	1	7	3	3	....

Table of Measurements, Etc.—Continued.

No. of Animal	Class, Lot and Name of Animal.	MEASUREMENTS.						HEIGHT FROM GROUND.								Depth from top line to lower shoulder point		Thickness through the crop		Length of back from top of shoulder to loin		Width across the loins		Length of quarter from loin to rump		Depth from loin to hock		Girth of paunch (middle)		Girth of throat latch.	
		Length of carcass		Heart girth		Flank girth		Top line.				Bot. line.																			
								Should'r		Hip		Fore flank		Flank																	
		Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
	Cow 3 years or over.																														
	FIRST PREMIUM NO. 86—SECOND PREMIUM NO. 34—THIRD PREMIUM NO. 85.																														
84	Ohio Bell	7	..	7	6	8	4	4	5	4	7	1	10	2	1	3	....	2	...	2	4	2	4	2	4	4	...	9	3	3	8
85	Nellie	7	..	7	6	8	2	4	8	4	9	1	10	2	2	2	10	2	1	2	2	2	2	2	4	3	11	8	10	3	5
86	Lady Peerless	7	.	8	2	8	3	4	7	4	8	1	11	2	3	2	10	2	5	2	...	2	3	2	6	4	....	9	....	3	3
	LOT 7—GRAND SWEEPSTAKES.																														
	Best Steer, Spayed Heifer or Cow in the show.																														
	PREMIUM NO. 87.																														
87	McMullen	7	5	8	8	9	2	5	3	5	3	2	2	2	7	3	2	2	4	2	7	2	6	2	7	4	5	9	11	3	10
88	Red Dick	6	10	8		8	5	4	8	4	11	1	10	2	3	2	10	2	...	2	4	2	2	2	4	4	....	9	3	3	6
89	Duke	7	5	9	2	9	6	5	3	5	3	2	..	2	4	3	1	2	4	2	10	2	6	2	6	3	5	10	2	3	2
90	Dandy	7	.	9	1	9	5	5	1	5	2	2	..	2	7	3	...	2	4	2	...	2	7	2	7	4	6	9	10	3	6
91	Bell Duke	7	11	8	11	8	11	5	2	5	4	2	1	2	8	3	4	2	6	2	7	2	6	2	5	4	2	9	9	3	9
92	Jim Blaine	7	..	9	..	8	9	5	..	5	1	2	..	2	6	4	4	2	4	2	5	2	6	2	5	4	3	9	10	3	9
93	King David	8	..	9	..	9	8	5	5	5	5	2	3	2	7	3	1	2	8	2	7	2	8	2	3	4	3	9	11	2	7

	Lot 8—Car Loads.																														
	Cattle 3 and under 4 years.																														
94	Dobbin	7	3	8	4	8	1	4	7	4	8	1	11	2	1	3	...	2	3	2	4	2	4	2	1	3	6	9	5	3	4
95	Barnes	7	6	8	2	7	10	5	1	5	1	2	2	2	7	3	....	2	1	2	4	2	2	2	3	4	....	9	2	3	8
96	Kimball	6	11	8		7	11	4	7	4	9	1	11	2	2	3	...	2	2	2	2	2	3	2	3	3	9	9	2	3	5
97	Wick	7	4	8	6	8	1	4	8	4	9	1	11	2	4	3	5	2	2	2	2	2	4	2	4	4	2	9	4	3	6
98	Ward	7	5	8	1	8	1	4	9	4	11	2		2	5	3	1	2	2	2	4	2	2	2	5	4	3	9	2	3	5
101	Blood	7	7	8	5	8	4	5		5	1	1	11	2	6	3	...	2	5	2	4	2	5	2	6	4	4	9	6	3	10
102	E. S. Wood	7	4	8	3	8	4	5	1	5	2	2	2	2	9	3	2	2	4	2	6	2	3	2	4	4	1	9	3	3	7
99	Oakley	6	8	8	5	8	4	4	10	4	10	2	1	2	4	3	2	2	1	2	6	2	2	2	6	4	...	9	2	3	7
103	Wild Bill	7	4	8	2	8	5	5		5	1	1	9	2	8	3	1	2	2	2	2	2	2	2	5	4	..	9	1	3	10
100	Capt. Jack	7		8	3	7	10	4	7	4	6	1	11	2	6	3	...	2	2	2	4	2	3	2	3	3	2	8	6	3	5
104	Barnum	7	.	7	11	8	11	4	9	4	11	1	11	2	6	3	1	2	1	2	3	2	3	2	4	3	11	7	11	3	6
105	Jumbo	7		7	10	7	9	4	10	4	10	1	10	2	4	3	1	2	...	2	3	2	4	2	3	3	8	9	1	3	7
106	Abbey	6	10	7	3	7	2	4	8	4	8	2		2	5	2	9	1	9	2	4	2	..	2	2	3	7	8	2	3	6
107	Prince	6	4	7	1	7	1	4	3	4	6	1	10	2	3	2	7	1	11	2	3	2	...	2	3	3	7	7	10	3	4
108	Buck	6	10	7	3	7	10	4	7	4	8	2		2	6	2	10	1	10	2	4	2	....	2	3	3	8	7	....	3	5
109	Bright	6	7	7	2	7	2	4	4	4	6	1	11	2	2	2	10	2	2	2	2	2	1	2	5	3	10	8	....	3	4
	Cattle 2 and under 3 years.																														
110	Clarkson	7	.	7	8	7	9	4	9	4	10	2	.	2	7	3	....	1	10	2	3	2	2	2	4	3	10	8	6	3	4
111	Porter	6	3	7	10	8	.	4	9	4	11	2	1	2	6	3	2	2	4	2	4	2	4	2	5	4	..	9	1	3	8
112	Shaffer	6	7	7	8	7	11	4	7	4	11	2	2	2	7	2	11	2	...	2	4	2	2	2	4	3	10	8	9	3	4
113	Smith	6	8	8		8	1	4	10	4	11	2	2	2	8	3	2	2	2	2	4	2	2	2	3	3	10	9	....	3	4
114	Champion	7	.	8	3	8	6	4	9	5	.	2	7		.	3	...	2	2	2	2	2	3	2	4	3	10	9	6	3	6
115	Knight	7	..	7	10	8	3	4	10	4	11	2	1	2	6	2	10	2	...	2	1	2	1	2	4	3	10	8	10	3	5
116	Blackstone	6	9	7	11	8	.	4	11	5	.	2	2	2	8	3	2	2	...	2	4	2	1	2	1	3	8	8	9	3	10
117	Bud	6	11	7	8	7	8	4	11	5		2	2	2	7	2	11	2	....	2	2	2	...	2	4	4	....	8	7	3	3
118	Justin	7	2	7	5	7	6	4	7	4	10	2		2	5	2	9	2	...	2	3	2	1	2	3	3	7	8	2	3	2
119	Houston	6	9	7	2	7	3	4	7	4	8	2		2	4	2	10	2	...	2	3	2	..	2	...	3	8	8	2	3	5
120	Dick	6	10	8	2	8	3	4	11	5	.	2	.	2	6	3	....	2	3	2	5	2	...	2	3	3	9	9	...	3	5
121	Downhorn	6	7	7	7	7	9	4	6	4	8	1	11	2	3	3	....	2	1	2	5	2	...	2	2	3	5	9	....	3	6
	Cattle 1 and under 2 years.																														
127	J. Wood	6	4	6	4	6	5	4	3	4	3	1	10	2	3	2	7	1	10	2	1	1	10	1	11	3	3	7	...	3	....
	Lot 9—Dressed Carcass.																														
	Steer or Spayed Heifer 3 and under 4 years.																														
135	Solomon	7	3	8	1	7	6	4	9	4	10	1	10	2	6	3	2	2	3	2	4	2	2	2	6	4	....	8	10	3	6

Table of Measurements, Etc.—Continued.

No. of Animal	Class, Lot and Name of Animal.	MEASUREMENTS.						HEIGHT FROM GROUND.								Depth from top line to lower shoulder point		Thickness through the crop		Length of back from top of shoulder to loin		Width across the loins		Length of quarter from loin to rump		Depth from loin to hock		Girth of Paunch (middle)		Girth of throat latch.	
		Length of carcass		Heart girth		Flank girth		Top line.				Bot line.																			
								Should'r		Hip		Fore flank.		Flank																	
		Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
	Steer or Spayed Heifer 2 and under 3 years.																														
136	Curly Coat	6	7	7	3	7	3	4	4	4	6	1	11	2	3	2	10	2	2	2	2	2	..	2	4	3	9	8	....	3	2
	Steer or Spayed Heifer 1 and under 2 years.																														
137	The Deacon	6	3	6		6		4	2	4	5	2	2	2	5	2	3	2	....	2	1	1	8	1	11	3	3	2	10	3	....
	LOT 11—HEAVIEST FAT STEER.																														
	FIRST PREMIUM NO. 126—SECOND PREMIUM NO. 129 —THIRD PREMIUM NO. 127.																														
138	Tim	8	4	9	1	9	9	5	8	5	8	2	2	2	9	3	8	2	5	2	9	2	10	2	10	4	9	10	7	3	
139	Eddy Morris	7	7	9	5	9	7	5	2	5	3	2		2	4	3	6	2	8	2	6	2	6	2	6	4	6	10	2	3	8
140	Booth	7	7	8	10	9	10	5	2	5	2	2	1	2	6	3	5	2	5	2	7	2	4	2	6	4	4	9	9	3	9
141	Snow Drift	9		9	1	9	2	5	9	5	7	2	3	3	2	3	8	2	3	2	10	2	6	2	10	4	10	9	6	4	1
	LOT 13—COST OF PRODUCTION.																														
142	**Steer or Spayed Heifer 1 and under 2 years.**																														
	Hattie	5	3	5	8	5	9	3	10	3	11	1	10	2	2	2	4	1	8	1	10	1	8	1	10	2	9	6	8	2	8

REPORTS OF AWARDING COMMITTEES,

CLASS A—CATTLE.

LOT 1—SHORTHORNS.

Steer or Spayed Heifer 3 and under 4 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds since birth	Name of Animal.
1	H. & I. Groff, Elmira, Can	1,305	2,535	1.94	King of the West
2	J. H. Potts & Son, Jacksonville	1,299	2,060	1 58	Dwight
3	C. Dodge & Son, South New Lyme, O.	1,316	1,840	1.40	Ohio 1st
4	C. Dodge & Son, South New Lyme, O.	1,322	1,910	1 44	Ohio 2d.
5	John B. Sherman, Chicago	1,434	2,360	1.62	Corporal
	Average	1,339	2,141	1.59	

First premium, $30, to steer King of the West, exhibited by H. & I. Groff, Elmira, Can.
Second premium, $20, to steer Dwight, exhibited by J. H. Potts & Son, Jacksonville.
Third premium, $10, to steer Ohio 1st, exhibited by C. Dodge & Son, South New Lyme, Ohio.

REPORT OF COMMITTEE.

The five steers entered in this ring were creditable specimens of the breed. There were one white, two roan and two red steers. All were smooth, well fatted steers, showing good breeding and feeding qualities, and there was not one inferior animal in the ring.

The average gain per day of this lot of steers leaves no doubt as to the profit thereon to the producer; while the handling qualities give assurance that the steers would cut to the profit of the butcher and furnish a desirable quality of well marbled meat to the consumer.

The steers were fine in bone, well covered in the best parts with thick, mellow flesh, and, from the usual external tests, would dress a large proportion of net to gross.

The first-premium steer was white, excelled his competitors in handling qualities and was the ripest for the block. This steer had made the largest average gain per day since birth, and was therefore the most profitable animal in the ring for the producer.

The steer awarded the first premium was better proportioned than the others, and was more evenly and thickly covered in the most valuable parts with thick, mellow flesh. This steer was attractive in appearance, with small, neat head and horn; short, nicely tapering neck, with good top, bottom and side lines, medium fine in bone, well let down in twist, and meated down to hock and gambrel joint.

The second-premium steer was a fine bullock, and not far behind his more successful competitor in the essential qualities that make up a profitable steer for the feeder and butcher and a desirable carcass for the consumer. This steer was not as ripe as the first-premium steer.

The third-premium animal was a good steer, not as well fatted, and coarser in bone than the first and second premium animals. Neither were his quarters as well proportioned.

Steer or Spayed Heifer 2 and under 3 years—no entry.

Steer or Spayed Heifer 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882.........	Average gain per day, in pounds, since birth	Name of Animal.
6	Cobb & Phillips, Kankakee..........	384	1,140	297	Cassius 5th. ....
7	" " "	412	1,105	268	Cassius 4th. ....
8	Can. W. Farm Stock Ass'n, Brantford, Can....	645	1,620	251	Clarence Kirklevington ...
	Average	480	1,288	272	

First premium, $30, to steer Clarence Kirklevington, exhibited by Can. W. Farm Stock Ass'n, Brantford, Can.
Second premium, $20, to steer Cassius 5th, exhibited by Cobb & Phillips, Kankakee.
Third premium, $10, to steer Cassius 4th, exhibited by Cobb & Phillips, Kankakee.

REPORT OF COMMITTEE.

The steers entered in this ring could be but little improved in handling qualities, were well developed for age, and showed a remarkably large average gain per day.

The superior breeding of the steers was evinced in the fineness of bone, attractive appearance, and general outline.

The steers were well proportioned throughout, with good top, bottom and side lines.

The first premium steer was white, and showed the least average gain per day of any steer in the ring, but, owing to his more advanced age, was the ripest, and promised the most desirable and profitable carcass for the butcher and consumer.

The second and third premium steers were good handlers, and well covered in the best parts with thick, mellow meat.

The steers had good top, bottom and side lines, nicely proportioned quarters, and very nearly approached the model of a butcher's bullock.

The remarkable average gain per day made by these two steers leaves no doubt of their superior feeding qualities, and that the well bred steer is a profitable animal for the beef producer.

Cow, 3 years old or over.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882.........	Average gain per day, in pounds, since birth	Name of Animal
9	Pickrell, Thomas & Smith, Harristown..........................	1,589	1,800	1.13	Rosa Bell ....
10	S. Croft & Bro., Wenona...............	2,174	1,690	0.77	Miami of Bedwood.........
11	David Grant, Petersburg.............	1,621	1,685	1.04	Lady Garfield ....
12	J. H. Potts & Son, Jacksonville......	1,404	1,865	1.32	Acorn 6th.....................
13	Canada West Farm Stock Ass'n, Brantford Can.......................	2,056	2,055	1.00	Royal Charmer 6th.........
14	S. E. Prather, Springfield.............	2,396	1,760	0.73	Lily Dale 2d ....
15	J. D. Gillett, Elkhart..	3,818	2,100	0.55	Beauty's Maid ....
16	A. M. Winslow's Sons, Kankakee....	1,794	1,510	0.84	4th Princess of Thorndale
	Average	2,106	1,806	0.85	

First premium, $30, to cow Acorn 6th, exhibited by J. H. Potts & Son, Jacksonville.
Second premium, $20, to cow Lily Dale 2d, exhibited by S. E. Prather, Springfield.
Third premium, $10, to cow Royal Charmer 6th, exhibited by Canada West Farm Stock Association, Brantford, Can.

REPORT OF COMMITTEE.

The cows, with few exceptions, had been breeders, and some were well advanced in age. There was not a patched or undesirable animal in the ring for the butcher. Considering the age, condition and usefulness of the majority of the cows as breeders, they were exceptionally free from bunches of fat so common to well fleshed aged cows.

The cows were all well bred animals, and would cut to advantage for the butcher and consumer.

The first premium animal was a deep red cow, compact and blocky, with neat head and horn, nicely tapering neck and had good top, bottom and side lines. Quarters in good proportion and well meated down to hock and gambrel joint. The most valuable portions of the carcass were thickly covered with flesh of a superior quality, as indicated by the handling qualities.

The second premium animal was a strawberry roan, and nearly up to the first premium cow in all that goes to make up a profitable butcher's beast. She was not as smooth as the first premium cow or as good a handler.

The first premium cow, when compared with the other premium animals, was rather light in the hind quarters and not as well filled behind the shoulders, otherwise an animal of great excellence and unusual length of carcass, well covered in the most valuable parts with a superior quality of meat.

LOT 2—HEREFORDS.

Steer or Spayed Heifer, 3 and under 4 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds since birth	Name of Animal.
17	M. H. Cochrane, Compton, Can.	1,121	1,765	1 57	Sir Richard

First premium, $30, to steer Sir Richard, exhibited by M. H. Cochrane, Compton, Can.

REPORT OF COMMITTEE.

There was but one entry in this ring, a very superior short-legged blocky steer, that had made a good growth. He was thickly covered with meat of good quality, and his handling qualities gave assurance of a profitable bullock for the butcher and a desirable carcass for the consumer. The steer was not as well filled across the loin as in other choice cuts.

Steer or Spayed Heifer 2 and under 3 years.

No.	Exhibiter.	Age, in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds, since birth	Name of Animal.
18	Earl & Stuart, LaFayette, Indiana	1,077	1,940	1.80	Wabash
19	A. A. Crane & Son, Osco	1,032	1,630	1.58	Excelsior, 4720
20	T. L. Miller Co., Beecher	753	1,310	1.74	Bertie
	Average	954	1,626	1.70	

First premium, $30, to steer Wabash, exhibited by Earl & Stuart, LaFayette, Ind.
Second premium, $20, to steer Excelsior, exhibited by A. A. Crane & Son, Osco.

REPORT OF COMMITTEE.

There were two steers in this ring of prime quality; both were evenly fatted and thickly fleshed. These steers were good handlers, and had made a profitable growth for the feeder. The butcher desiring choice meat for critical customers, could suggest but little improvement in the quality or distribution of the flesh of these steers.

The first premium animal very nearly approached the butcher's standard for a profitable bullock, likely to furnish the consumer a large proportion of meat of the best quality. He was riper than the second premium steer, and better filled in the twist.

The second premium steer was a very superior animal for the dealer and consumer and a good match for his more successful competitor, except in the matter of matu and lighter hind quarters.

The spayed heifer was not deserving of consideration for even a third premium

Steer or Spayed Heifer 1 and under 2 years.

No.	Exhibiter.	Age, in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds, since birth	Name of Animal.
21	A. A. Crane & Son, Osco	697	1,330	1.90	My Maryland 4721

First premium, $30, to steer My Maryland 4721, exhibited by A. A. Crane & Son, Osco.

REPORT OF COMMITTEE.

The only animal entered in this ring was a fair butcher's steer, rather coarse but well developed for age, and promising as a young steer for further feeding.

Cow 3 years old or over.

No.	Exhibiter.	Age, in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds, since birth	Name of Animal.
22	Fowler & Van Natta, Fowler, Ind.	1,818	1,545	0.85	Bright Spot
23	T. L. Miller Co., Beecher	3,943	1,800	0.45	Princess Alice Maud, 1029.
		2,880	1,672	0.65	

First premium, $30, to Cow, Princess Alice Maud 1029, exhibited by T. L. Miller Co., Beecher.

Second premium, $20, to Cow, Bright Spot, exhibited by Fowler & Van Natta, Fowler, Indiana.

REPORT OF COMMITTEE.

The cows entered in this ring were well advanced in years and past their prime as butcher's stock.

The first premium cow did not have a good top line, but was better proportioned throughout than the second premium animal.

The second premium cow was a fair handler, had a good loin, but was very deficient in rump.

Grade Shorthorn Steer, Tom Brown, exhibited by D. M. MONINGER, Galvin, Iowa. Awarded Sweepstakes Premium—Steer 3 and under 4 years old. Fat Stock Show, 1882—p 117.

LOT 5—GRADES OR CROSSES.

Steer or Spayed Heifer 3 and under 4 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882..........	Weight Nov. 15, 1882............	Average gain per day in lbs. since birth...........	Name of Animal.	Breed.
24	G.S. Burleigh, Mech'icsv., Ia	1,248	1,630	1.30	Broad Horns.....	Grade Hereford.
25	G.S. Burleigh, Mech'icsv., Ia	1.110	1,805	1 62	Jones....	" "
26	H. & I. Groff, Elmira, Can..	1,265	2,400	1 90	Canadian Cham.	Grade Shorthorn
27	T. L. Miller Co., Beecher...	1,355	1,990	1.46	Damon...........	Grade Hereford.
28	T. L. Miller Co., Beecher ..	1,378	1,870	1.35	Pythias...........	" "
29	J. H. Potts & Son, Jack'ville	1,296	2,115	1.63	Thad. Stevens 2d	Grade Shorthorn
30	D. M. Moninger, Galvin, Ia .	1,404	2,065	1.47	Loring............	" "
31	D. M. Moninger, Galvin, Ia .	1,174	1,945	1.65	Tom Brown......	" "
32	D. M. Moninger, Galvin, Ia .	1 218	2,135	1.75	Sherman.....	" "
33	C. M. Culbertson, Chicago..	1,415	1,845	1.30	Spot Face........	Grade Hereford.
34	Thos. Foster, Flint, Mich...	1,239	1,865	1 50	Duke...............	" "
35	Thos. Foster, Flint, Mich...	1,236	1,950	1.58	Diamond..........	" "
36	John D. Gillett, Elkhart....	1,314	2,045	1.55	Wild Indian......	Grade Shorthorn
37	John D. Gillett, Elkhart....	1,185	2,080	1.75	Comet........	" "
38	John D. Gillett, Elkhart....	1,368	2,105	1 53	Clincher..........	" "
39	John D. Gillett, Elkhart....	1,156	2,160	1.87	Chance............	" "
40	John D. Gillett, Elkhart....	1,279	2,060	1.61	Storm..............	" "
41	John D. Gillett, Elkhart....	1,279	2,090	1 63	Garfield	" "
42	John D. Gillett, Elkhart....	1,279	2,065	1 61	Arthur............	" "
43	John D. Gillett, Elkhart....	1,248	2,235	1.79	John Sherman...	" "
44	John D. Gillett, Elkhart....	1,368	2,250	1.64	Cash.......	" "
45	John D. Gillett, Elkhart....	1,187	3,100	1.77	Chub.	" "
46	John D. Gillett, Elkhart....	1,170	2,045	1 75	Nels. Morris......	" "
47	J. H. Potts & Son, Jack'ville	1,095	1,985	1 81	Major............	" "
.	Average...................	1,261	2,034	1 61		

First premium, $30, to steer Tom Brown, exhibited by D. M. Moninger, Galvin, Ia
Second premium, $20, to steer Major, exhibited by J. H. Potts & Son, Jacksonville.
Third premium, $10, to steer Canadian Champion, exhibited by H. & I. Groff, Elmira, Canada.

REPORT OF COMMITTEE.

The steers entered in this ring were compact, blocky animals, short in leg, well topped, and with scarcely an exception prime butchers' stock. It is doubtful if a more profitable bunch of steers of like number was ever before brought together.

The weight and large average gain per day made by all the animals in the ring leaves no doubt as to the profit thereon to the producer, while the handling qualities insure desirable carcasses for the critical consumer, and handsome returns to the butcher.

The first premium steer was a model of a butcher's bullock, and it would have been difficult to suggest an improvement. The small, neat head, fine bone, short leg, well proportioned quarters and thickly meated frame, gave promise of a larger percentage of beef of a superior quality than any steer in the ring. The length and depth of loin was unusual.

The second premium steer very nearly approached the first premium animal in all essential points. He was much the youngest animal in the ring, not quite as mature or thickly meated as the first premium steer, but finer in bone.

The third premium steer was not as nicely proportioned as the first or second premium steer; the hind quarters not being as well filled in the round. A third place in so large a ring of animals of such excellence is no mean honor.

Steer or Spayed Heifer 2 and under 3 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882..........	Weight Nov. 15, 1882..........	Average gain per day in lbs. since birth..........	Name of Animal.	Breed.
48	Geo. B. Welsh, Tallula......	933	1,825	1.96	Jim Blaine.	Grade Shorthorn
49	Geo. B. Welsh, Tallula......	941	1,655	1.76	Sandy......	" "
50	H. Norris & Sons, Aurora...	972	1,735	1.78	Jay................	" "
51	H. Norris & Sons, Aurora...	994	1,750	1.76	Jerry..........	" "
52	H. & I. Groff. Elmira, Can...	902	1,740	1.93	Young Aberdeen	" "
53	D. M. Moninger, Galvin, Ia..	1,011	1,850	1.83	Grinnell..........	" "
54	D. M. Moninger, Galvin, Ia..	1,034	1,905	1.84	Col. Scott.........	" "
55	D. M. Moninger, Galvin, Ia..	1,080	1,785	1.65	Bennett...........	" "
56	D. M. Moninger, Galvin, Ia..	776	1,585	2.04	Harry West.......	" "
57	C. M. Culbertson, Chicago..	1,050	1,650	1 57	Roan Boy.........	Grade Hereford.
58	John D. Gillett. Elkhart.....	958	2,220	2.59	Mammoth.........	Grade Shorthorn
59	John D. Gillett, Elkhart.....	949	1,700	1.80	Jesse..............	" "
60	John D. Gillett, Elkhart.....	934	1,745	1 86	Baldwin..........	" "
61	John D. Gillett, Elkhart....	887	1,595	1.80	Tip Top...........	" "
62	T. L. Miller Co., Beecher...	866	1,705	1.97	Conqueror II.....	Grade Hereford.
63	T. L. Miller Co., Beecher...	966	1,815	1 88	Beecher..........	" "
64	T. L. Miller Co., Beecher...	972	1,680	1.73	Highland Lad...	" "
65	T. L. Miller Co., Beecher...	978	1,720	1.75	Wallace..........	" "
66	T. L. Miller Co., Beecher...	970	1,655	1.71	King William....	" "
	Average..................	951	1,753	1.85		

First premium, $30, to steer Grinnell, exhibited by D. M. Moninger, Galvin, Ia.
Second premium, $20, to steer Mammoth, exhibited by John D. Gillett, Elkhart.
Third premium, $10, to steer Col. Scott, exhibited by D. M. Moninger, Galvin, Ia.

REPORT OF COMMITTEE.

There was not an inferior or even medium steer in the ring. All the animals were superior in all that goes to make up a choice carcass, quite uniform as to size, smooth and evenly fatted, fine in bone, short in leg, blocky and compact in form.

The excellent handling qualities gave assurance that the steers would give the butcher good returns, and furnish the consumer meat of extra quality, while the large average gain per day leaves no doubt as to the handsome profits realized thereon to the feeder.

The steers were so evenly matched that it was difficult to make a choice.

The first premium steer was the fattest and smoothest in the ring, and from all the external tests gave assurance of dressing a larger percentage of choice meat to gross weight than any of his competitors. This steer had a small, neat head, short neck, evenly proportioned quarters, good top, bottom and side lines was well let down in twist and thickly meated down to hock and gambriel joint. In form and handling qualities this steer was near perfection as a profitable butcher's bullock.

The second premium steer was the most attractive animal in the ring for the feeder, and when critically compared with the first premium steer, there was but a shade of difference in form or handling qualities, or the percentage of profit likely to be returned to the butcher. The second premium steer was heavier in bone and hardly as thickly fleshed as the first premium animal.

The third premium steer had a very good loin, but the quarters were not as well proportioned as the first and second premium animals.

Steer or Spayed Heifer 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882..........	Weight Nov. 15, 1882..........	Average gain per day, in pounds, since birth.....	Name of Animal.	Breed.
67	Fowler & VanNatta, Fowler, Ind....	574	1,410	2 45	Benton's Ch'mp'n	Grade Hereford..
68	Fowler & VanNatta, Fowler, Ind.	561	1.250	2.23	Squire..	" ..
69	Fowler & VanNatta, Fowler, Ind.	568	1,225	2.17	Curly Jim........	" ..
70	A. A. Crane & Son, Osco.. .	652	1,325	2.03	Ohio..............	" ..
71	" " " ...	615	1,120	1.82	Mason...........	" ..
72	J.H.Potts & Son, J'cks'nville	715	1,600	2.23	Red Major......	Grade Shorthorn
73	Stone & Loake, Stonington.	475	1,025	2 16	Experiment......	Grade Hereford..
74	C. L. Blanchard, Morenci, Mich.	620	1,390	2 24	Drift.......	Grade Shorthorn
75	C. M. Culbertson, Chicago..	720	1,475	2 05	White Back......	Grade Hereford..
76	D. M. Moninger, Galvin, Ia..	715	1,655	2.31	Champi'n of Iowa	Grade Shorthorn
77	John D. Gillett, Elkhart...	682	1,430	2 10	T. Eastman	"
78	" " ...	454	1,230	2 70	Waixel	"
79	" "	549	1,240	2 26	J. Adams.........	"
80	" "	523	1,270	2 42	Conover..........	"
81	T. L. Miller Co., Beecher ...	714	1,380	1.93	Sir Thomas	Grade Hereford..
82	" "	549	1,232	2 24	St. Paul	" ..
83	" "	524	1,155	2 20	Eighty-one	" ..
	Average.................	600	1,318	2 20		

First premium, $30, to steer Red Major, exhibited by J. H. Potts & Son, Jacksonville.

Second premium, $20, to steer Benton's Champion, exhibited by Fowler & Van Natta, Fowler, Ind.

Third premium, $10, to steer White Back, exhibited by C. M. Culbertson, Chicago.

REPORT OF COMMITTEE.

The yearling steers, as a lot, were remarkably well matured for their age. All were high grades, and in form and general make-up showed good breeding.

The first premium steer was much riper than the other animals in the ring, and, considering age, was covered in the best parts with thick, mellow flesh.

The second premium was awarded a very superior steer, finer in bone than the first and third premium animals, and, with more flesh, would not have been nearly approached by any steer in the ring.

The third premium steer was more thickly meated than the second premium animal, but somewhat heavier in bone, and not so good a handler nor as evenly fleshed, neither were his quarters as well proportioned, as those of the first and second premium animals.

Cow 3 years old or over.

No.	Exhibiter.	Age in days, Nov. 15, 1882..........	Weight Nov. 15, 1882..........	Average gain per day, in pounds, since birth.....	Name of Animal.	Breed.
84	C. Dodge & Son, So. New Lyme, O....................	1,686	1,815	1.11	Ohio Belle	Grade Shorthorn
85	D. M. Moninger, Galvin, Ia.	2,039	1,995	0.97	Nellie.............	"
86	John D. Gillett, Elkhart....	1,644	1,880	1.14	Lady Peerless ..	"
	Average.................	1.773	1,896	1.07		

First premium, $30, to cow Lady Peerless, exhibited by John D. Gillett, Elkhart.

Second premium, $20, to cow Ohio Belle, exhibited by C. Dodge & Son, South New Lyme, Ohio.

Third premium, $10, to cow Nellie, exhibited by D. M. Moninger, Galvin, Ia.

REPORT OF COMMITTEE.

There were two very superior cows in this ring, and one coarse animal entitled to little consideration in a show of this character.

The first premium cow was a very attractive butcher's beast, with good back and loin and evenly proportioned quarters, fine in bone, short in leg, and a thickly meated, blocky, compact beast. This cow was well bred and a profitable animal for the butcher, with small head, short neck, straight top, bottom and side lines, and good handling qualities.

The second premium cow would not dress as large a per cent. of net to gross weight as the first premium cow, was a little more paunchy, smaller in bone, somewhat better in twist than the first premium cow, which she nearly approached in other essential matters which go to make up a profitable butcher's beast.

The third premium cow was only fairly fleshed, and thinly covered in the best parts of the carcass with meat of medium quality.

LOT 6—SWEEPSTAKES RINGS.

Steer or Spayed Heifer 3 and under 4 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds since birth	Name of Animal.	Breed.
25	G.S.Burleigh, Mechan'lle, Ia	1,110	1,805	1 62	Jones	Grade Hereford.
27	T. L. Miller Co., Beecher	1,355	1,990	1 46	Damon	" "
28	" "	1,378	1,870	1.35	Pythias	" "
2	J. H. Potts & Son, Jack'ville	1,290	2,060	1 58	Dwight	Shorthorn
47	" "	1,095	1,985	1 81	Major	Grade Shorthorn.
29	" "	1,296	2,115	1 63	Thad. Stevens 2d.	" "
30	D. M. Moninger, Galvin, Ia.	1,404	2,065	1 47	Loring	" "
31	" "	1,174	1,945	1 65	Tom Brown	" "
32	" "	1,218	2,135	1 75	Sherman	" "
33	C. M. Culbertson, Chicago	1,415	1,845	1.30	Spot Face	Grade Hereford.
3	C. Dodge & Son, South New Lyme, O.	1,316	1,840	1.40	Ohio 1st	Shorthorn
4	C. Dodge & Son, South New Lyme, O.	1,322	1,910	1.44	Ohio 2d	"
1	H. & I. Groff, Elmira, Can.	1,305	2,535	1 94	King of the West	"
26	" "	1,265	2,400	1.90	Canadi'n Cham'n	Grade Shorthorn.
34	Thos. Foster, Flint, Mich.	1,239	1,865	1.50	Duke	Grade Hereford.
35	" "	1,236	1,950	1 58	Diamond	" "
40	John D. Gillett, Elkhart	1,279	2,060	1.61	Storm	Grade Shorthorn.
41	" "	1,279	2,090	1.63	Garfield	" "
44	" "	1,368	2,250	1 64	Cash	" "
100	" "	1,208	1,885	1.56	Capt. Jack	" "
	Average	1,278	2,030	1.59		

Premium, $50, to steer Tom Brown, exhibited by D. M. Moninger, Galvin, Ia.

REPORT OF COMMITTEE.

In this ring twenty of the forty-five animals entered were exhibited—five roan, two white and thirteen red steers. This lot of steers, in form, breeding and feeding qualities, approached a high standard of excellence as profitable steers for the feeder, butcher and consumer.

There was not a patched or inferior steer in the ring, and it is doubtful if a lot of the same number of equally good, compact, blocky, thickly meated steers was ever shown together. All the steers were well covered in the best parts of the carcass with a good quality of meat.

The steer awarded the sweepstakes premium was the best handler in the ring, the most evenly fatted and more thickly covered with a superior quality of meat than any other steer in the ring. The steer had a soft, mossy coat, and was smooth as a cushion; flesh firm and mellow. The large average gain per day made by this steer leaves no doubt as to the handsome profit realized by the feeder.

This model of a butcher's bullock had all the external indications of dressing a very large percentage of choice meat to gross weight.

Hereford Steer, Wabash, exhibited by Earl & Stuart Lafayette, Ind Awarded Sweepstakes Premium—Steer 2 and under 3 years old.
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Steer or Spayed Heifer 2 and under 3 years.

No.	Exhibiter.	Age in days Nov. 15, 1882........	Weight Nov. 15, 1882......... ...	Average gain per day in pounds since birth......	Name of Animal.	Breed.
48	Geo. B. Welsh, Tallula......	933	1,825	1.96	Jim Blaine.......	Grade Shorthorn
49	" "	941	1,655	1.76	Sandy	" "
18	Earl & Stuart, Lafayette, Ind	1,077	1,940	1.80	Wabash	Hereford ....
19	A. A. Crane & Son, Osco....	1,032	1,630	1 58	Excelsior 4720....	" ....
62	T. L. Miller Co., Beecher....	866	1,705	1.97	Conqueror II	Grade Hereford.
63	" "	966	1,815	1.88	Beecher..........	" "
64	" "	972	1,680	1.73	Highland Lad ...	" "
65	" "	978	1,720	1.75	Wallace	" "
110	D. M. Moninger, Galvin, Ia.	991	1,805	1.82	Clarkson..... ...	Grade Shorthorn
53	" "	1,011	1,850	1 83	Grinnell..........	" "
55	" "	1,080	1,785	1.65	Bennett	" "
57	C. M. Culbertson, Chicago..	1,050	1,650	1.57	Roan Boy........	Grade Hereford.
66	T. L. Miller Co., Beecher ...	970	1,655	1.71	King William.....	" "
52	H. & I. Groff, Elmira, Can..	902	1,740	1 93	Young Aberdeen	Grade Shorthorn
58	John D. Gillett, Elkhart.....	858	2,220	2 59	Mammoth	" "
118	" "	944	1,945	2.06	Justin	" "
59	" "	949	1,700	1 80	Jesse	" "
	Average	971	1,783	1.84		

Premium, $50, to steer Wabash, exhibited by Earl & Stuart, Lafayette, Ind.

REPORT OF COMMITTEE.

All the steers entered in this ring showed the advantage of a large infusion of improved blood. With scarcely an exception, the animals were well matured and in prime condition for the block.

The large average gain per day made by these cattle ensured good return to the feeder, while the handling qualities gave assurance that they would cut to the profit of the butcher and furnish a product acceptable to the critical consumer.

The steer awarded the honor in this grand ring of young beef animals was evenly fatted and thickly covered with firm, mellow flesh. He had the longest, widest and thickest loin of any steer in the ring, and, from all external indications, would dress a larger percentage of net to gross than any of his competitors. This steer approached such a high standard of excellence as a profitable beast for the feeder, butcher and consumer, as to make it difficult to suggest any improvement.

Steer or Spayed Heifer 1 and under 2 years.

No.	Exhibiter.	Age in days Nov. 15, 1882.........	Weight, Nov. 15, 1882...........	Average gain per day in lbs. since birth...........	Name of Animal.	Breed.
6	Cobb & Phillips, Kankakee.	384	1,140	2 97	Cassius 5th.......	Shorthorn........
7	" "	412	1,105	2.68	Cassius 4th.......	" ....
67	Fowler & VanNatta, Fowler, Ind....	574	1,410	2.45	Benton's Champion.	Grade Hereford .
68	Fowler & VanNatta, Fowler, Ind..........	561	1,250	2 23	Squire	" "
21	A. A. Crane & Son, Osco ...	697	1,330	1 90	My Maryland 4721	Hereford.........
72	J. H. Potts & Son, Jack'ville	715	1,600	2.23	Red Major.......	Grade Shorthorn
8	Can West Farm Stock Ass'n, Brantford, Canada	645	1,620	2 51	Clarence Kirklevington	Shorthorn.. .....
77	John D. Gillett, Elkhart....	682	1,430	2 10	T. Eastman	Grade Shorthorn
127	" " ...	584	1,195	2 05	J. Wood...	" "
80	" "	523	1,270	2 42	Conover	" "
81	T. L. Miller Co., Beecher ...	714	1,380	1 93	Sir Thomas	Grade Hereford .
82	" " ..	549	1,232	2,24	St. Paul......	" "
76	D. M. Moninger, Galvin, Ia.	715	1,655	2 31	Champ'n of Iowa	Grade Shorthorn
	Average...	596	1,355	2.30		

Premium, $50, to steer Red Major, exhibited by J. H. Potts & Son, Jacksonville.

REPORT OF COMMITTEE.

Considering the age of the steers, they were well matured, and showed a very large average gain per day.

There was no lack of evidence of good breeding or skillful feeding, with any of the animals in this ring.

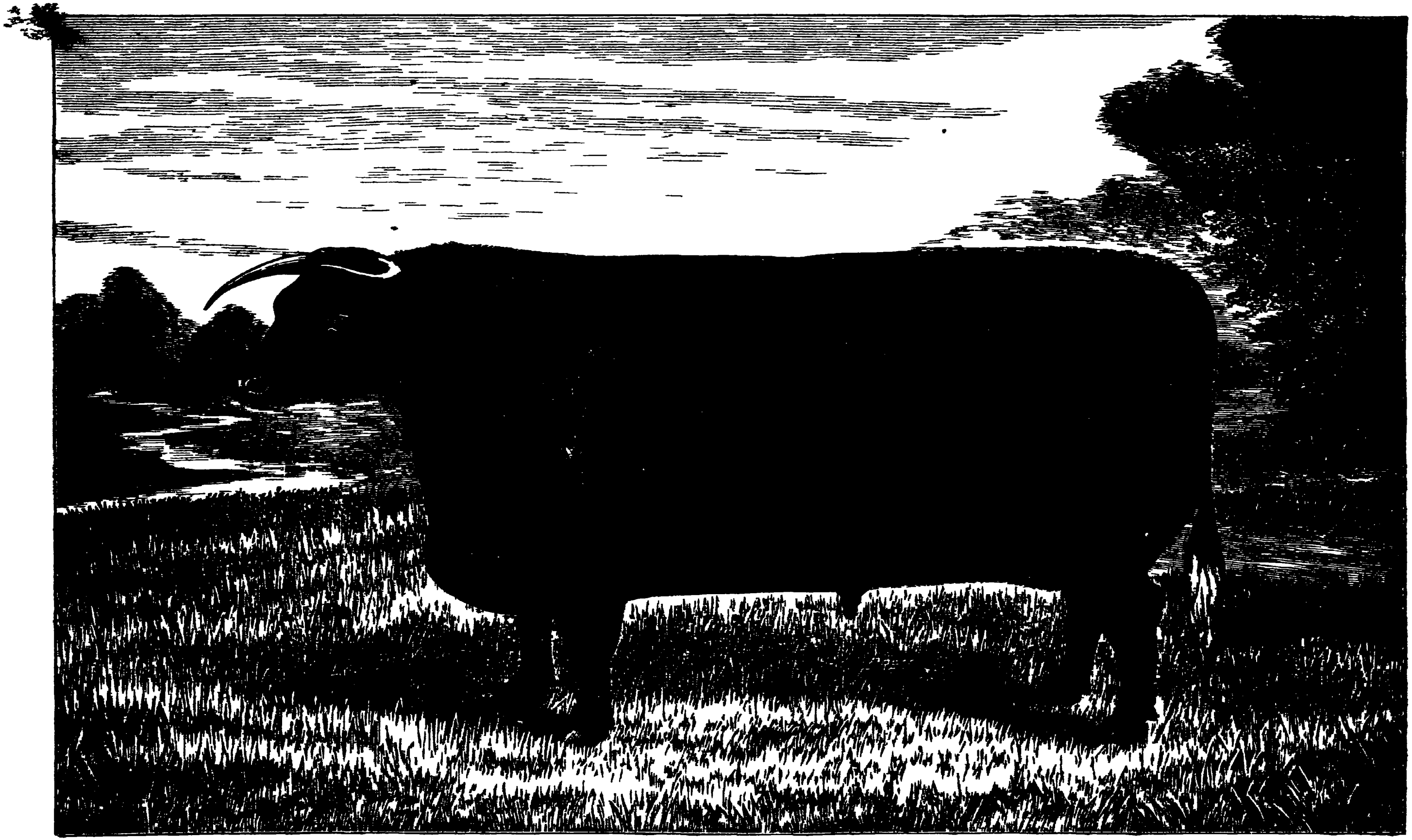
The steer awarded the premium was the ripest animal in the ring for slaughter, and had the best distribution of meat in the most valuable portions of the carcass. His quarters were more evenly proportioned than any other steer in the ring, while the handling qualities gave assurance of his cutting a larger per cent. of choice meat to gross weight than either of his competitors.

The premium steer was well covered and thickly meated down to hook and gambriel joint, and unusually mature and ripe for the block, for a yearling.

Cow 3 years old or over.

No.	Exhibiter.	Age in days, Nov. 15, 1882.........	Weight, Nov. 15, 1882...........	Average gain per day in lbs. since birth...........	Name of Animal.	Breed.
9	Pickrell, Thomas & Smith, Harristown....	1,589	1,800	1.18	Rosa Bell	Shorthorn ....
13	Can. W. Farm Stock Ass'n, Brantford, Can.....	2,056	2,055	1 00	Royal Ch'mer 6th	" ....
10	S. Croft & Bro., Wenona....	2,174	1,690	0 77	Miami of Redw'd	" ....
23	T. L. Miller Co., Beecher ...	3,943	1,800	0.45	Pr. Alice Ma'd 1029	Hereford.........
11	David Grant, Petersburg ..	1,621	1,685	1.04	Lady Garfield....	Shorthorn........
12	J. H. Potts & Son, Jacksonville....	1,404	1,865	1.32	Acorn 6th	" ....
84	C. Dodge & Son, South New Lyme, O...	1,636	1,815	1.11	Ohio Belle........	Grade Shorthorn
86	J. D. Gillett, Elkhart........	1,644	1,880	1,14	Lady Peerless ...	" "
14	S. E. Prather. Springfield ..	2,396	1,760	0.73	Lily Dale 2d......	Shorthorn........
	Average....	2,051	1,816	0.96		

Premium, $50, to cow Acorn 6th, exhibited by J. H. Potts & Son, Jacksonville.



Grade Shorthorn Steer McMullen exhibited by JOHN D GILLETT Elkhart Ill Awarded Grand Sweepstakes Premium, Fat Stock Show, 1882 —p 123.

REPORT OF COMMITTEE.

Considering the age of some of the cows, the animals in the ring were a very desirable lot of butchers' stock. Several of the cows were non-breeders. With the exception of two high grades, the cows were pure bred, and creditable specimens of the respective breeds. The cows were evenly fatted, and with scarcely an exception would cut to the profit of the butcher and furnish the customer good meat.

The cow awarded the premium was a well-bred and attractive animal, more evenly fatted and thickly meated than the other cows, with a superior quality of firm and mellow flesh.

LOT 7—GRAND SWEEPSTAKES.

OPEN TO ALL.

Best Steer, Spayed Heifer or Cow in the Show.

Premium, $100, to steer McMullen, exhibited by John D. Gillett, Elkhart.

REPORT OF COMMITTEE.

The twenty-seven head of cattle brought into this ring composed the choicest animals exhibited, and included thoroughbreds and their grades and crosses, as well as a number of steers over four years old not heretofore exhibited.

The quality of the animals nearly approached the highest standard as profitable butchers' stock, and the most critical consumer could not complain of the well marbled meat assured by the handling qualities.

In form, growth and make-up, the steers showed their fine breeding and good feeding qualities.

There was not a bad topped steer in the ring, and excepting a few aged and over-fat steers, that had passed the profitable age for killing, all were in prime condition for slaughter.

The steer awarded the grand sweepstakes was over four years old, and had not competed in any former ring, owing to his age. This steer was more evenly and thickly covered than either of his competitors, with the best quality of well marbled meat, as judged by the usual tests. The small, neat head, short, nicely tapering neck, fine bone, well proportioned quarters, and compact form, promised a larger per cent. of net to gross than any other steer in the ring.

The top, bottom and side lines were good, and the make-up of the steer was near perfection for a butcher's beast, while the handling qualities were such as to leave no doubt of the superior quality of flesh.

LOT 8—CAR LOADS.

Eight Cattle, 3 and under 4 years.

CAR LOAD NO. 1.

No.	Exhibitor.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day, in pounds since birth	Name of Animal.	Breed.
30	D. M. Moninger, Galvin, Ia.	1,404	2,065	1.47	Loring	Grade Shorthorn
94	" " ..	1,420	1,970	1.38	Dobbin	" "
31	" " ..	1,174	1,945	1.65	Tom Brown	" "
32	" " ..	1,218	2,135	1 75	Sherman	" "
95	" " ..	1,294	2,005	1.55	Barnes	" "
96	" " ..	1,274	1,940	1 52	Kimball	" "
97	" " ..	1,233	2,125	1.72	Wick.	" "
98	" " ..	1,415	2,030	1.43	Ward	" "
	Average	1,304	2,026	1 56		

CAR LOAD NO. 2.

No.	Exhibitor.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day, in pounds since birth	Name of Animal.	Breed.
41	J. D. Gillett, Elkhart	1,279	2,090	1.63	Garfield	Grade Shorthorn
42	" "	1,279	2,065	1 61	Arthur	" "
40	" "	1,279	2,060	1.61	Storm	" "
99	" "	1,340	2,180	1.62	Oakley	" "
43	" "	1,248	2,235	1.79	John Sherman	" "
44	" "	1,368	2,250	1.64	Cash	" "
100	" "	1,208	1,885	1.56	Capt. Jack	" "
46	" "	1,170	2,045	1 75	Nels Morris	" "
	Average	1,271	2,101	1.65		

CAR LOAD NO. 3.

No.	Exhibitor.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day, in pounds since birth	Name of Animal.	Breed.
101	J. D. Gillett, Elkhart	1,219	2,300	1.88	Blood	Grade Shorthorn
36	" "	1,314	2,045	1 55	Wild Indian	" "
102	" "	1,357	2,195	1.62	E. S. Wood	" "
57	" "	1,185	2,080	1.75	Comet	" "
38	" "	1,368	2,105	1.53	Clincher	" "
39	" "	1,156	2,160	1.87	Chance	" "
45	" "	1,187	2,100	1.77	Chub	" "
103	" "	1,248	2,320	1.86	Wild Bill	" "
	Average	1,254	2,163	1.72		

CAR LOAD NO. 4.

No.	Exhibitor.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day, in pounds since birth	Name of Animal.	Breed.
27	T. L. Miller Co., Beecher	1,355	1,990	1.46	Damon	Grade Hereford..
28	" "	1,378	1,870	1.35	Pythias	" " ..
104	" "	1,279	1,980	1.55	Barnum	" " ..
105	" "	1,279	1,920	1.50	Jumbo	" " ..
106	" "	1,278	1,710	1 34	Abbey	" " ..
107	" "	1,385	1,560	1.12	Prince	" " ..
108	" "	1,381	1,450	1.05	Buck	" " ..
109	" "	1,371	1,600	1.16	Bright	" " ..
	Average	1,338	1,760	1.31		

First premium, $150, to car load No. 2, exhibited by John D. Gillett, Elkhart.

Second premium, $75, to car load No. 1, exhibited by D. M. Moninger, Galvin; Iowa.

REPORT OF COMMITTEE.

The four car loads of steers were composed of smooth, matured bullocks of uniform individual excellence, with scarcely an inferior animal in the ring.

The first premium car load lot of cattle were thickly fleshed, well-bred, smooth animals, with good top, bottom and side lines, and in make up there was a close resemblance, showing in a marked degree a fixedness of type.

The second premium car load lot had not made as large average gain per day as the bunch of cattle awarded the first premium, were not as evenly matched, and some of the animals were not as well covered in the best parts.

The other two car load lots, while containing some very choice specimens, were not so uniform, smooth or thickly fleshed as the premium car loads.

Ten Cattle 2 and under 3 years.

CAR LOAD NO. 1.

No.	Exhibiter.	Age in days, Nov. 15, 1882.	Weight Nov. 15, 1882.	Average gain per day in pounds since birth.....	Name of Animal.	Breed.
110	D. M. Moninger, Galvin, Ia.	991	1,805	1 82	Clarkson	Grade Shorthorn.
53	" " "	1,011	1,850	1 83	Grinnell	" "
54	" " "	1,034	1,905	1 84	Col. Scott	" "
111	" " "	1,055	1,910	1 84	Porter	" "
112	" " "	1,017	1,875	1.84	Shaffer	" "
113	" " "	1,050	1,880	1 79	Smithy	" "
114	" " "	1,073	2,200	2 05	Champion.........	" "
115	" " "	1,052	1,820	1 73	Knight......	" "
55	" " "	1,080	1,785	1 65	Bennett	" "
56	" " "	776	1,585	2 04	Harry West ...	" "
	Average	1,013	1,864	1.84		

CAR LOAD NO. 2.

59	John D. Gillett, Elkhart....	858	2,220	2 59	Mammoth........	Grade Shorthorn.
116	" " "	989	1,980	2 00	Blackstone	" "
117	" " "	980	1,775	1 81	Bud.	" "
118	" " "	944	1,945	2.06	Justin	" "
59	" " "	949	1,700	1 80	Jesse	" "
60	" " "	934	1,745	1.86	Baldwin	" "
119	" " "	928	1,555	1 67	Houston	" "
120	" " "	927	1,950	2.10	Dick	" "
121	" " "	928	1,795	1.93	Downhorn	" "
61	" " "	887	1,595	1.80	Tip-top....... ...	" "
	Average	932	1,826	1 96		

CAR LOAD NO. 3.

62	T. L. Miller Co., Beecher ...	866	1,705	1.97	Conqueror II.....	Grade Hereford.
63	" " ..	966	1,815	1 88	Beecher	" "
64	" " ..	972	1,680	1 73	Highland Lad....	" "
66	" " ..	970	1,655	1.71	King William....	" "
65	" " ..	978	1,720	1.75	Wallace	" "
122	" " ..	1,034	1,475	1.42	Napoleon..........	" "
123	" " ..	1,033	1,395	1 35	Murat............	" "
124	" " ..	1,032	1,355	1.31	Ney	" "
125	" " ..	975	1,470	1.51	Ohio Chief.......	" "
126	" " .	949	1,245	1 31	Marion	" "
	Average	977	1,551	1.59		

First premium, $150, to car load No. 1. exhibited by D. M. Moninger, Galvin, Iowa.
Second premium, $75, to car load No. 2, exhibited by John D. Gillett, Elkhart.

REPORT OF COMMITTEE.

The three car loads of steers, two and under three years of age, had made good growth, and were not only a profitable lot of cattle for the feeder and butcher, but promised very superior carcasses for the consumer.

The first premium car load lot was the ripest in the ring, and the steers were the smoothest and most evenly fatted, finer in bone and showed the best breeding.

This car load was more thickly fleshed and evenly quartered than the other lots, and promised a larger per cent. of net to gross.

The second premium car load was rather coarser in bone than the first premium lot; not as well quartered or topped, or as good handlers; neither was there as much care in breeding or skill in feeding evinced as with the first premium lot.

Twelve Cattle 1 and under 2 years.

No.	Exhibiter.	Age, in days, Nov. 15, 1882........	Weight Nov. 15, 1882...	Average gain per day in pounds, since birth......	Name of Animal.	Breed.
77	John D. Gillett, Elkhart....	682	1,430	2.10	T. Eastman.......	Grade Shorthorn
127	" " "	584	1,195	2.05	J. Wood	" "
128	" " "	544	1,110	2.04	Doc. Wood.......	" "
129	" " "	452	1,055	2.33	Cherry...........	" "
130	" " "	539	1,125	2.08	G. Adams	" "
79	" " "	549	1,240	2.26	J. Adams.........	" "
131	" " "	531	1,060	1.99	Truman	" "
80	" " "	523	1,270	2.42	Conover..........	" "
132	" " " . ..	517	1,150	2.22	Hoxie....	" "
133	" " " ...	500	990	1.98	Chub.............	" "
78	" " "	454	1,230	2.70	Waixel...........	" "
134	" " "	448	1,050	2.34	Waixel, Jr........	" "
	Average.................	526	1,158	2.20		

First premium, $150, to car load exhibited by John D. Gillett, Elkhart.

REPORT OF COMMITTEE.

There was but one car load of yearling steers, well worthy of the premium.

The steers had made a profitable growth for the feeder, and were a promising lot for the butcher, needing only continued good feeding to ensure a very superior and desirable bunch of cattle for the consumer.

Some of the steers were quite mature, and in prime condition for slaughter.

Lot 9—DRESSED CARCASS.

Weights of Various Parts of Slaughtered Animals.

Age, 3 and under 4 years.

Name and Postoffice of Exhibiter.	Name of Animal.	Breed.	Age in days	Average gain per day since birth	Weight at home	Live weight at slaughter	Weight dressed, carcass or four quarters	Per cent. net carcass or quarters to gross weight	Weight, carcass, hide and tallow	Per ct. profitable wt. of carcass, hide and tallow to gr or l. wt	Weight, tallow	Weight, hide	Weight, left fore-quarter	Weight, right fore-quarter	Weight, left hind-quarter	Weight, right hind-quarter
G. S. Burleigh, Mechanicsville, Iowa.	Broad Horns	Grade Hereford	1,248	1.30	1,640	1,580	988	.63	1,211½	.76	128½	95	269	255	222	242
T. L. Miller Co., Beecher	Pythias	Grade Hereford.	1,378	1 35	1,850	1,800	1,183	.66	1,410½	.78	118½	109	220	317	277	269
J. D. Gillett, Elkhart	Captain Jack	Grade Shorthorn	1,208	1 56	1,930	1,855	1,280	.69	1,525	.82	149	96	354	349	290	287
C. M. Culbertson, Chicago	Solomon	Grade Hereford	1,284	1.55	2,020	1,955	1,293	.66	1,602	82	207	102	357	355	289	292
M. H. Cochrane, Compton, Quebec.	Sir Richard	Hereford	1,121	1 57	1,775	1,690	1,149	68	1,375	81	118½	107½	295	290	277	287
Average			1,248	1.46	1 843	1,776	1,178	66	1,425	.80	144	102	319	313	271	275

Age, 3 and under 4—*Continued.*

Name of Postoffice of Exhibiter.	Name of Animal	Breed.	Weight, head	Weight, feet	Weight, paunch	Weight, guts	Weight, liver	Weight, heart	Weight, tongue	Weight, lungs	Weight, blood	Weight, shrinkage	Weight of unprofitable parts	Per cent. of unprofitable weight to gross or live weight
G. S. Burleigh, Mechanicsville, Iowa	Broad Horns	Grade Hereford	41½	19½	106	47	11	6½	5	6½	48	77½	368½	.24
J. S. Miller Co., Beecher	Pythias	Grade Hereford	37	17½	117	41	14	5	6	8	47	97	389½	.22
T. L. Gilbert, Elkhart	Captain Jack	Grade Shorthorn	43	22	95	25	13	6	7	14½	57	47½	330	.18
C. M. Culbertson, Chicago	Solomon	Grade Hereford.	43	19½	160	24	13	6	6⅛	10	53	18	353	.18
M. H. Cochrane, Compton, Quebec	Sir Richard	Herefore	39	20	131	25	13½	5	6	8⅝	44	23	315	.19
Average			40	19	122	32	13	6	6	9	50	52	351	.30

Premium $50 to Steer, Sir Richard. Exhibited by M. H. Cochrane, Compton (Quebec), Canada.

Age, 2 and under 3 years.

Name and Postoffice of Exhibiter.	Name of Animal	Breed.	Age in days.	Average gain per day since birth	Weight at home	Live wt. at slaughter	Weight dressed carcass or four quarters	Per cent. net carcass or quarters to gross weight	Weight carcass, hide and tallow	Per ct. profitable wt. (carcass, hide, tallow) to gross or live wt	Weight tallow	Weight hide	Wt. left fore quarter.	Wt. right fore quarter	Wt. left hind quarter.	Wt. right hind quarter
T. L. Miller Co., Beecher	Beecher	Grade Hereford	966	1.88	1,820	1,790	1,165	65	1,415	.79	135	115	307	309	277	272
H. Norris & Son, Aurora	Jay	" "	972	1 78	1,778	1,735	1,115	.64	1,321½	76	101½	105	294	285	272	264
C. M. Culbertson, Chicago	Curly Coat	" "	1,061	1.38	1,500	1,440	930	.64	1,141½	.72	125	96½	244	240	222	224
Average			999	1 68	1,699	1,655	1,070	64	1,292	.75	120	102	281	278	257	253

Age, 2 and under 3 years—*Continued.*

Name and Postoffice of Exhibiter.	Name of Animal.	Breed.	Weight head	Weight feet	Weight paunch	Weight guts	Weight liver	Weight heart	Weight tongue	Weight lungs	Weight blood	Loss of weight by shrinkage	Weight of unprofitable parts	Per cent. unprofitable weight to gross or live weight
T. L. Miller Co., Beecher	Beecher	Grade Hereford.	44	23	136	48	9	7	8	11	49	40	375	.21
H. Norris & Son, Aurora	Jay	" "	43	23	148	48	15	5½	6	11	39	75	413½	24
C. M. Culbertson, Chicago	Curly Coat	" "	33½	16	110	35	10	5	5	6½	33	44½	298½	28
Average			40	20	131	43	11	6	6	9	40	53	362	24

Premium, $50, to steer Jay, exhibited by H. Norris & Son, Aurora, Ill.

Dressed Carcass—Continued.

Age 1 and under 2 years.

Name and Postoffice of Exhibiter.	Name of Animal.	Breed.	Age in days	Average gain per day since birth	Weight at home	Live wt. at slaughter.	Weight dressed carcass or four quarters.	Per ct net carcass or quarters to gross weight	Weight carcass, hide and tallow.	Per ct. profitable wt. (carcass, hide and tallow,) to gr. or live wt.	Weight tallow	Weight hide	Weight left fore quarter	Weight right fore quarter	Weight left hind quarter	Weight right hind quarter
Stone & Loake, Stonington	Experiment	Grade Hereford.	475	2 16	1,020	1,000	616	61	745	.74	54	75	155	153	155	158
J. D. Gillett, Elkhart	The Deacon	Grade Shorthorn.	615	1 74	1,140	1,040	663	.63	806½	.77	70	73½	170	170	165	158
J. H Potts & Son, Jacksonville	Red Major.	" "	715	2 23	1,585	1,540	1,028	66	1,221	.79	97	96	259	257	257	255
Average			601	2 04	1,248	1,193	769	.63	924	77	73	81	194	193	192	188

Age 1 and under 2—*Continued.*

Name and Postoffice of Exhibiter.	Name of Animal.	Breed.	Weight head	Weight feet	Weight paunch	Weight guts	Weight liver	Weight heart	Weight tongue	Weight lungs	Weight of blood	Loss of weight by shrinkage	Weight of unprofitable parts	Per cent. unprofitable weight to gross or live weight
Stone & Loake, Stonington	Experiment	Grade Hereford	25	11½	102	26	12	3	4	7	21	43½	255	.26
J. D. Gillett, Elkhart	The Deacon	Grade Shorthorn	28	16	69	31	11	4	5	9	28	32½	233½	.23
J. H. Potts & Son, Jacksonville	Red Major	" "	31	20	106	35	12	4	6	12	52	41	319	21
Average			28	15	92	30	11	4	5	9	33	39	269	23

Premium, $50 to steer Red Major, exhibited by J. H. Potts & Son, Jacksonville

LOT 10—DRESSED CARCASS—SWEEPSTAKES.

Carcass of Steer or Spayed Heifer of any age.

Premium, $75, to steer Sir Richard, exhibited by M. H. Cochrane, Compton, Can.

LOT 11—HEAVIEST FAT STEER.

No.	Exhibiter.	Age in days, Nov. 15, 1882..........	Weight Nov. 15, 1882............	Average gain per day in pounds since birth.......	Name of Animal.	Breed.
93	H. B. Varnum, Marshalltown, Iowa	2,186	2,732	1.25	King David.	Grade Shorthorn
89	C. Dodge & Son, South New Lyme, O.......	1,172	2,725	1.53	Duke	Shorthorn........
90	C. Dodge & Son, South New Lyme, O	1,772	2,430	1.38	Dandy...	" ....
135	John B. Sherman, Chicago	2,769	3,050	1.10	Tim.	Grade Shorthorn
136	" "	2,411	2,775	1.15	Eddy Morris	Shorthorn........
137	" "	2,100	2,710	1.29	Booth.	" ....
138	Allen Varner, Indianola....	2,069	2,820	1.36	Snow Drift.	Grade Shorthorn
	Average.......	2,154	2,748	1.29		

First premium $75, to steer Tim, exhibited by John B. Sherman, Chicago.

Second premium $50, to steer Snowdrift, exhibited by Allen Varner, Indianola.

Third premium $25, to steer Eddy Morris, exhibited by John B. Sherman, Chicago.

REPORT OF COMMITTEE.

The steers in this ring had passed their prime for slaughter and profit either to the butcher or feeder. Considering age, condition and remarkable weight, the steers as a lot were quite smooth and free from bunches of fat, but undesirable for the consumer.

LOT 12—EARLY MATURITY.

Steer or Spayed Heifer showing greatest average given per day since birth—3 and under 4 years.

No.	Exhibitor.	Age in days Nov. 15, 1882	Weight Nov. 15, 1882............	Average gain per day in pounds since birth	Name of Animal.	Breed.
25	G. S. Burleigh, Mechanicsville, Iowa	1,110	1,805	1.62	Jones	Grade Hereford.
1	H. & I. Groff, Elmira, Can	1,305	2,535	1.94	King of the West	Shorthorn........
26	" "	1,265	2,400	1.90	Can. Champion .	Grade Shorthorn
27	F. L. Miller Co., Beecher..	1,355	1,990	1.46	Damon	Grade Hereford.
28	" "	1,378	1,870	1.35	Pythias....... ...	" " .
2	J. H. Potts & Son, Jacksonville...	1,299	2,060	1.58	Dwight.	Shorthorn ....
29	J. H. Potts & Son, Jacksonville..........	1,296	2,115	1.63	Thad Stevens II.	Grade Shorthorn
88	John D. Gillett, Elkhart ...	1,136	2,060	1.81	Red Dick.	" "
104	F. L. Miller Co., Beecher...	1,279	1,980	1.55	Barnum	Grade Hereford.
105	" "	1,279	1,920	1.50	Jumbo...........	" " .
47	J. H. Potts & Son, Jacksonville..................	1,095	1,985	1.81	Major.	Grade Shorthorn
	Average..................	1,254	2,065	1.65		

First premium $50, to steer King of the West, exhibited by H. & I. Groff, Elmira, Can.

Second premium $25, to steer Canada Champion, exhibited by H. & I. Groff, Elmira, Can.

Steer or Spayed Heifer, 2 and under 3 years.

No.	Exhibitor.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in lbs. since birth	Name of Animal.	Breed.
48	Geo. B. Welsh, Tallula......	933	1,825	1.96	Jim Blaine	Grade Shorthorn
18	Earl & Stuart, Lafayette, Ind	1,077	1,940	1.80	Wabash	Hereford ....
19	A. A. Crane & Son, Osco...	1,032	1,630	1 58	Excelsior 4720 ..	" ... .
52	H. & I. Groff, Elmira, Can.	902	1,740	1 93	Young Aberdeen.	Grade Shorthorn
50	H. Norris & Sons, Aurora	972	1,735	1 78	Jay.	Grade Hereford.
51	" " " ..	994	1,750	1 76	Jerry	" "
58	John D. Gillett, Elkhart...	858	2,220	2 59	Mammoth........	Grade Shorthorn
63	T. L. Miller Co., Beecher...	966	1,815	1.88	Beecher..........	Grade Hereford
	Average.................	966	1,831	1 91		

First premium, $50, to steer Mammoth, exhibited by John D. Gillett, Elkhart.
Second premium, $25, to steer Jim Blaine, exhibited by Geo. B. Welsh, Tallula.

Steer or Spayed Heifer, 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882......	Average gain per day in lbs. since birth.	Name of Animal.	Breed.
7	Cobb & Phillips, Kankakee.	412	1,105	2 69	Cassius 4th	Shorthorn ....
6	" " "	384	1,140	2 97	Cassius 5th	" ....
72	J. H. Potts & Son, Jack'ville	715	1,600	2 23	Red Major	Grade Shorthorn
73	Stone & Loake, Stonington	475	1,025	2 16	Experiment......	Grade Hereford
74	C.L.Blanchard, Morence, Mh	620	1,390	2 24	Drift	Grade Shorthorn
77	John D. Gillett, Elkhart ..	682	1,430	2 10	T. Eastman.......	" "
127	" " " ...	584	1,195	2 05	J. Wood	" "
130	" " " ...	539	1,125	2 08	G. Adams.........	" "
80	" " "	523	1,270	2 42	Conover..........	" "
78	" " "	454	1,230	2 70	Waixel...........	" "
81	T. L. Miller Co., Beecher.	714	1,380	1 93	Sir Thomas	Grade Hereford.
82	" " . ..	549	1,232	2 24	St. Paul..........	" "
	Average.........	554	1,260	2.31		

First premium, $50, to steer Cassius 5th, exhibited by Cobb & Phillips, Kankakee.
Second premium, $25, to steer Waixel, exhibited by John D. Gillett, Elkhart.

LOT 13—COST OF PRODUCTION.

Steer or Spayed Heifer, 3 and under 4 years.

No.	Exhibiter.	Age in days Nov. 15, 1882.	Weight Nov. 15, 1882.	Average gain per day in pounds since birth.	Name of Animal.	Breed.
	H. & I. Groff, Elmira, Can.	1,305	2,535	1 94	King of the West	Shorthorn
	" " "	1,265	2,400	1 90	Can'da Champ'on	Grade Shorthorn
	Average	1,285	2,467	1 92		

First premium $65, to steer Canadian Champion, exhibited by H, & I. Groff, Elmira, Can.
Second premium $35, to steer King of the West, exhibited by H. & I. Groff, Elmira, Can.

Steer or Spayed Heifer, 2 and under 3 years.

No.	Exhibitor.	Age in days Nov. 15, 1882.	Weight Nov. 15, 1882.	Average gain per day in pounds since birth.	Name of Animal.	Breed.
	Geo B. Welsh, Tallula	933	1,825	1 96	Jim Blaine	Grade Shorthorn
	H. & I. Groff, Elmira Can	902	1,740	1 93	Young Aberdeen	" "
	H. Norris & Sons, Aurora.	972	1,735	1 78	Jay	Grade Hereford.
	Average	935	1,766	1.89		

First premium $65, to steer Jim Blaine, exhibited by George B. Welsh, Tallula.
Second premium $35, to steer Jay, exhibited by H. Norris & Sons, Aurora.

Steer or Spayed Heifer, 1 and under 2 years.

No.	Exhibter.	Age in days Nov. 15, 1882.	Weight Nov. 15, 1882.	Average gain per day in pounds since birth.	Name of Animal.	Breed.
	Cobb & Phillips, Kankakee.	384	1,140	2 97	Cassius 5th	Shorthorn
	" " "	412	1,105	2 68	" 4th	"
	G. S. Burleigh, Mechanicsville, Iowa	437	830	1 90	Hattie	Grade Hereford.
	Stone & Loake, Stonington.	475	1,025	2.16	Experiment	" "
	Average	427	1,025	2.42		

First premium $65, to spayed heifer Hattie, exhibited by G. S, Burleigh, Mechanicsville, Iowa.

Second premium $35, to steer Cassius 5th, exhibited by Cobb & Phillips, Kankakee.

LOT 13—COST OF PRODUCTION.

To the State Board of Agriculture:

Your committee to whom was referred the awarding of prizes in the "cost of production rings," would report as follows: The statements of applicants present much interesting and valuable information to feeders, and will doubtless, when published, induce not only progressive cattle feeders, but the more intelligent general farmers, to investigate the most economical methods of producing good beef. The profit to the producer of choice beef has not received sufficient attention, and the committee cannot too highly commend the Illinois State Board of Agriculture for making this all important matter one of the many valuable features of the Fat Stock Show.

The statements giving items of cost of production are creditable to all concerned, and much more complete than could be expected at the inception of such a movement. The statements are verified by the affidavits of the competitors, the majority of whom have evidently kept accurate accounts of grain and other food consumed, while others have estimated, and so reported the amount of forage consumed.

The price of each article of food was determined upon an equitable and uniform basis to all the competitors, and upon this standard the cost of the several commodities mentioned in the statements presented by exhibiters was calculated. The premiums were awarded as follows

Steer or Spayed Heifer, 3 and under 4.

First premium, $65, H. & I. Groff, Elmira, Ontario, Can., on grade Shorthorn steer Canadian Champion, weight, 2400 pounds; total cost of production $206.70, or $8.61 per 100 pounds.

Second premium, $35, to H. & I. Groff, Elmira, Ontario, Can., on the Shorthorn steer King of the West; weight, 2335 pounds; total cost of production, $208.33, or $8.92 per 100 pounds.

Steer or Spayed Heifer, 2 and under 3 years.

First premium $65, to G. B. Welch, Tallula, Ill., on grade Shorthorn steer Jim Blaine, weight, 1825 pounds, total cost of production, $82.96, or $4.55 per 100 pounds.

Second premium, $35, H. Norris & Son, Aurora Ill., on grade Hereford steer Jay; weight, 1735 pounds; total cost of production, $111.97, or $6.42 per 100 pounds.

Steer or Spayed Heifer, 1 and under 2 years.

First premium, $65, to G. S. Burleigh, Mechanicsville, Iowa; on grade Hereford heifer Hattie (spayed); weight, 830 pounds; total cost of production, $23.22, or $2.80 per 100 pounds.

Second premium, $35, to Cobb & Phillips, Kankakee, Ill., on Shorthorn steer Cassius V.; weight, 1140 pounds; total cost of production, $40.58, or $3.56 per 100 pounds.

In the yearling ring, the animal produced at the least cost per pound was the lightest animal competing, and would not bring as much per pound in the market as the second premium steer, and if the present market value had been considered the awards would have been reversed.

It will be seen in the accompanying statements that the value of the calf at birth, pasturage each year, as well as expense for care, are the same in each case, which leaves the amounts of other kinds of food consumed to determine the question of cost of production. As the competing animals were either pure bred or high grades, the amount of improved blood possessed by each would not give material advantage to either exhibiter.

The statements give some interesting data concerning feeding experiments where the exhibiter evidently had in view the most rapid growth of the animal, rather than economical production. Had the latter been the chief object sought, less expensive kinds of feed would in certain cases have been used. The committee present the following tables, showing the comparative cost year by year of each animal entered. In order to make the yearly statement complete the value of the animals at the commencement of each year is included and based upon the actual weight certified by the exhibiter at a fixed value, six cents per pound, live weight.

It is suggested that the very complete form on which exhibiters in this ring are required to give items of cost of production be published hereafter in the premium list for the information of such parties as contemplate competing in this ring in future.

Respectfully submitted,
R. BAKER, Elyria, Ohio.
IRA. H BUTTERFIELD, Port Huron, Mich.
ABRAM WOLF, New Albany, Ind.

COST OF PRODUCTION.

Steer or Spayed Heifer, 24 to 36 months old.

Name and P. O. of Exhibiter.	Breed.	Name of Animal.	Date of birth.	Value grain consumed 24 to 36 months........	Value hay and forage cons'd 24 to 36 months.	Value other food.......	Value pasture consum'd 24 to 36 months	Expense for care 24 to 36 months...............	Total cost production 24 to 36 months	Weight at 36 months...	Value at 36 months at 6 cents per pound	Cost of production per pound on gain made from 24 to 36 months.	Gain 24 to 36 months....	Gain 12 to 24 months ...	Gain 1 to 12 months.....
H. & I. Groff, Elmira, Ont	Shorthorn.........	King of the West....	April 19, 1879..	$48 00	$16 00	$6 00	$6 50	$5 00	$81 50	$22 50	$135	$12 54	$6 50	$6 00	$10 00
H. & I. Groff, Elmira, Ont.	Grade Shorthorn	Canadian Champion.	May 29, 1879...	48 00	16 00	6 00	6 50	5 00	81 50	22 50	135	12 54	6 50	6 00	10 00
Average...............	....	....	....	$48 00	$16 00	$6 00	$6 50	$5 00	$81 50	$22 50	$135	$12 54	$6 50	$6 00	$10 00

COST OF PRODUCTION.

Steer or Spayed Heifer, 12 to 24 months old.

Name and P. O. of Exhibiter.	Breed.	Name of Animal.	Date of birth.	Value grain consumed	Value hay and forage...	Value pasture consum'd	Expense for care . .	Total cost production	Weight at 24 months...	Value at 24 months at 6 cents per pound	Cost of production per pound on gain made from 12 to 24 months	Gain 12 to 24 months...	Increase in gain first 12 months over second 12 months..............
H. Norris & Son, Aurora, Ill...........	Grade Hereford..	Jay	March 18, 1880.	$18 10	$4 75	$2 46	$5 00	$30 31	$13 70	$82 20	$5 31	570	230
H. & I. Groff, Elmira, Ontario.........	Shorthorn.......	King of the West ...	April 19, 1879..	34 67	10 00	2 46	5 00	52 13	16 00	96 00	8 68	600	400
G. B. Welch, Tallula, Ill...............	Grade Shorthorn	Jim Blaine	April 26, 1880	24 56	5 57	2 46	5 00	37 59	13 90	83 40	8 54	440	510
H. & I. Groff, Elmira, Ontario.........	Grade Shorthorn	Young Aberdeen...	May 27, 1880	34 66	10 00	2 46	5 00	52 12	16 00	96 00	8 68	600	400
H. & I. Groff, Elmira, Ontario........	Grade Shorthorn	Canadian Champion	May 29, 1879 .	34 66	10 00	2 46	5 00	52 12	16 00	96 00	8 68	600	400
Average.......................	....	....	....	$29 33	$8 06	$2 46	$5 00	$44 85	$15 12	$90 72	$7 98	562	388

COST OF PRODUCTION.

Steer or Spayed Heifer, 1 to 12 months old.

Name and P. O. of Exhibiter.	Breed.	Name of Animal.	Date of birth.	Value at birth.	Value milk consumed.	Value grain consumed	Value hay and forage consumed	Value pasture.	Expense for care, etc.	Total cost	Weight at 12 months.	Value at 12 months at 6c per pound	Cost production per pound
H. Norris & Son, Aurora, Ill	Grade Hereford	Jay	March 18, 1880	$5 00	$14 00	$7 55	$3 00	$1 75	$5 00	$31 30	800	$48 00	$3 91
H. & I. Groff, Elmira, Ontario	Shorthorn	King of West	April 19, 1879	5 00	10 00	16 00	1 92	1 75	5 00	34 67	1,000	60 00	3 46
G. B. Welch, Tallula, Ill	Grade Shorthorn	Jim Blaine	April 26, 1880	5 00	7 06	12 34	1 38	1 75	5 00	27 53	950	57 00	2 90
H. & I. Groff, Elmira, Ontario	" "	Young Aberdeen	May 27, 1880	5 00	10 00	16 00	1 92	1 75	5 00	34 67	1,000	60 00	3 46
" " " "	" "	Canadian Champion	May 29, 1879	5 00	9 00	16 00	1 92	1 75	5 00	33 67	1,000	60 00	3 36
Stone & Loake, Stonington, Ill	Grade Hereford	Experiment	July 28, 1881	5 00	15 00	11 57	22	1 75	5 00	33 54	710	42 60	4 72
Cobb & Phillips, Kankakee, Ill	Shorthorn	Cassius IV	Sept. 29, 1881.	5 00	53 60	17 12	4 00	1 75	5 00	81 47	1,000	60 00	8 14
G. S. Burleigh, Mechanicsville, Iowa	Grade Hereford	Hattie	Sept. 4, 1881	5 00	9 00	...	4 00	1 75	5 00	19 75	700	42 00	2 82
Cobb & Phillips, Kankakee, Ill	Shorthorn	Cassius V	Oct. 27, 1881.	5 00	15 13	12 47	3 80	1 75	5 00	38 15	1,090	65 40	3 50
Average				$5 00	$15 86	$13 63	$2 46	$1 75	$5 00	$39 19	917	$55 00	$4 03

CLASS B—HORSES.

DAVID E. BEATY, *Superintendent.*

LOT 14—HORSES ON EXHIBITION.

No. Stall...........	Name and Postoffice of Exhibiter.	Date of birth......	Age in days ...	Weight Nov. 15, 1882	Average gain per day in lbs since birth......	Name of Animal.	Breed.	Color.
....	J. H. Truman, Chicago	1877	....	1,950	......	Atlas 2386	Shire	Black
213	" "	1875	....	1,850	.. ..	Huntingdonshire Duke	"	Brown
212	" "	1879	... ..	1,758	... ..	Brown Prince	"	Brown
210	" "	1880	......	1,375	. . ...	Harlequin	"	Bay
211	" "	1890	.... ..	1,585	... ...	Bouncer 2538	"	Brown
205	" "	1879	.... ..	1,600	.. ....	Gypsy Girl	"	Black
204	" "	1879	.... ..	1,610	... ...	Beauty	"	Bay
201	" "	1879	.. ..	1,495	....	Brown Duchess 1st.	"	Brown
207	" "	1880	... ..	1,490	....	Brown Duchess 2d.	"	Black
208	" "	1880	.. ...	1,575	....	Mrs Langtry	"	Brown
209	" "	1881	.. ...	1,265	....	Sir Edward	"	Black

CATALOGUE—CLASS C—SHEEP.

E. B. DAVID, *Superintendent*.

No. Stall	Name and Postoffice of Exhibiter.	Date of birth.		Age in days	Weight Nov. 15, 1882	Average gain per day in lbs. since birth.	Name of Animal.	Breed.
14	M. N. Hood, Guelph, Can	April	25, '82	204	180	0.88	Nannie	Grade Shropshire
14	" "	April	12, '82	217	125	0.57	Minnie	" "
14	" "	April	11, '82	218	120	0.55	May	Grade Merino
14	" "	March	17, '79	1,338	325	0.24	Nellie Ackers	Cotswold
15	" "	April	16, '82	213	118	0.55	Thom	Grade Shropshire
15	" "	April	17, '82	212	127	0.59	Dick	" "
15	" "	April	18, '82	211	110	0.52	Harry	" "
15	" "	March	25, '81	600	295	0.49	Marmion	Leicester
15	" "	April	9, '81	585	118	0.20	Walsingham	Grade Southdown
15	" "	March	29, '81	596	219	0.36	Professor	Grade Shropshire
15	" "	April	15, '81	579	210	0.36	Lord Boyle	Grade Oxford
16	" "	April	20, '81	574	215	0.37	Robin Hood	Grade Leicester
16	" "	April	10, '81	584	219	0.37	Lady Brown	Grade Oxford
17	" "	April	15, '80	944	260	0.28	Thom Nichols	Leicester
17	" "	April	16, '80	943	284	0.30	Blackfoot	"
17	" "	April	17, '80	942	257	0.27	Dave	"
17	" "	March	25, '82	235	178	0.75	Jim Kelly	"
18	" "	May	5, '80	923	265	0.29	Fred	Grade Oxford
18	" "	May	11, '80	918	222	0.24	Willie	" "
18	" "	March	23, '80	967	270	0.28	Kate	Grade Southdown
18	" "	March	22, '80	968	254	0.26	Belle	" "
19	" "	April	15, '81	579	170	0.29	Eugenie	Grade Merino
19	" "	April	14, '81	580	110	0.19	Betsey	Grade Oxford
25	E. Peck & Sons, Geneva		1881				4 Rams	Merino
26	" "	April	1, '75	2,783	120	0.04	Queen 104	"
26	" "	April	1, '80	958	84	0.09	Long Wool 102	"
26	" "	April	1, '81	593	69	0.12	Bess 147	"
26	" "	April	1, '82	228	52	0.23	Daisy 208	"
27	Taylor Bros., Waynesville		1881				2 Rams	"
28	" "	April	13, '76	2,406	107	0.04	Lady Clark	"
28	" "	April	12, '79	1,312	106	0.08	Jane	"
28	J. A. Brown & Son, Decatur	March	22, '80	238	136	0.56	Smut Lamb	Cotswold
28	" "	March	4, '80	986	305	0.31	Queen	"

29	" "	March	18, '81	607	219	0 36	Smut face	"
29	" "	March	18, '81	607	204	0.34	Upstart	"
30	" "	March	24, '80	966	292	0.30	Dick	"
30	" "	March	26, '80	964	247	0 26	Curly	"
30	" "	March	30, '80	960	263	0 27	Leggy	"
47	Simon Beattie, Annan, Scotland		1881				5 Oxfords	
48	" "		1881				5 Cotswolds	
49	Stone & Loake, Stonington						2 Rams	
50	" "	March	1, '81	624	243	0.39	Miss Winchendon	Oxford
50	" "	March	4, '81	621	248	0 40	Miss Kate	"
50	" "	March	5, '81	620	246	0 40	Rosette	"
51	" "	March	6, '81	619	240	0 39	Beatrice	"
51	" "	March	8, '81	617	225	0.36	Necklace.	"
52	J. H. Potts & Son, Jacksonville	April	1, '80	958	210	0.22	Tom	Southdown
52	" "	April	1, '80	958	200	0 21	Dick	"
52	" "	March	25, '80	965	210	0 22	Harry	"
53	" "	April	5, '81	589	185	0 31	No. 21	"
53	" "	March	25, '81	600	197	0 32	No. 28	"
53	" "	April	5, '81	589	200	0 34	No. 26	"
54	" "	March	19, '82	241	93	0.38	No. 32	"
54	" "	March	15, '82	245	121	0 49	No. 34	"
54	" "	March	10, '82	250	128	0 51	No. 38	"
55	W. Carter, Rockford						5 Shropshires	
56	Morgan & Cotton, Rockford	March	30, '79	1,325	270	0 20	Model	Shropshire
56	" "	April	3, '80	956	241	0.25	Monarch	"
56	" "	April	10, '80	949	222	0 23	Milton	"
56	" "	April	5, '80	954	210	0.22	Georgie	"
56	" "	April	12, '80	947	178	0.18	Bertie	"
57	B. Waddel, Marion, O	Jan.	14, '80	1,035	253	0 24	Ben	Grade Merino
58	" "	Jan.	17, '80	1.032	253	0 25	Will	" "
58	" "	Jan	20, '80	1,029	241	0 23	Fant	" "
59	" "	Jan.	22, '78	1,757	255	0 15	George	" "
59	" "	Jan.	25, '78	1,754	218	0.12	Joe	" "
61	Mrs. Anne Newton, Pontiac, Mich	March	10, '80	980	306	0 31	Turpin	Cotswold
61	" "	Dec.	1, '80	714	251	0 35	Dandy	"
61	" "	March	2, '80	988	238	0 24	Big Mary	Lincolnshire
62	" "	March	24, '82	236	124	0 52	Roger	"
62	" "	March	20, '82	240	85	0 35	Nell	Shropshire
63	" "	March	28, '81	597	204	0 34	Bessie	Lincolnshire
63	" "	March	1, '80	989	228	0.23	Captor	Shropshire
63	" "	April	3, '82	226	94	0 42	Lue	"
63	" "	March	4, '80	986	220	0 22	Topsy	"
64	" "				5,255		Car load 30 wethers	"
65	" "							
66	" "							
67	" "							
68	" "							
69	Simon Beattie, Annan, Scotland		1881				5 Shropshires	
70	" "		1881				5 Southdown and Cotswold.	
71	Frank Willson, Jackson, Mich	April	1, '80	958	165	0.17	Chubby	Southdown
71	" "	April	1, '81	593	237	0 40	Abe	Grade Cotswold
71	" "	April	1, '80	958	200	0 21	Flora	" "

Class C—Sheep—Continued.

No. Stall	Name and Postoffice of Exhibiter.	Date of birth.	Age in days	Weight Nov. 15, 1882	Average gain per day in lbs. since birth	Name of Animal.	Breed.
71	Frank Willson, Jackson, Mich	April 10, '81	584	170	0.29	Nannie	Grade Cotswold
72	" "	March 15, '80	975	263	0.27	Jerry	Cotswold
72	" "	April 8, '81	586	180	0.31	Mack	"
72	" "	March 20, '81	605	253	0.42	Jennie	"
72	" "	April 12, '82	217	125	0.57	Polly	"
73	" "	March 15, '80	975	263	0.27	Maud S	"
73	" "	March 15, '80	975	256	0.26	Molly	"
74	J. H. Potts & Son, Jacksonville					5 Shropshires	
75	" "					"	
76	" "					"	
77	J. H. Truman, Chicago					14 "	
79	" "					15 "	

REPORTS OF AWARDING COMMITTEES.

CLASS C—SHEEP.

In awarding the premiums on the various rings of sheep, the judges, while giving to perfection of outline and quality of pelt their full value, were especially influenced by that form and condition which assured the largest proportion of meat in the most valuable parts, and that quality of firm, well marbled flesh most highly prized by judges of prime mutton, and so readily distinguished from lumpy fat.

LOT 15 — LONG WOOLS.

Wether 2 and under 3 years.

No.	Exhibiter.	Age in days Nov. 15, 1882.......	Weight, Nov. 15, 1882...	Average gain per day in lbs. since birth.........	Name of Animal	Breed.
154	J. A. Brown & Son, Decatur.	966	292	0 30	Dick...	Cotswold ....
155	" "	961	247	0.26	Curly	" .. . .
156	" "	960	263	0 27	Leggy.........	" ... .
157	Fr. Willson, Jackson, Mich	975	263	0 27	Jerry	" ....
158	Mrs. Anne Newton, Pontiac, Mich	980	306	0 31	Turpin............	" ....
159	M. N. Hood, Guelph, Can .	944	260	0 28	Thom. Nichols...	Leicester ...
160	" " ..	942	257	0 27	Dave	" ....
161	" " .	943	284	0 30	Blackfoot.:...	" ....
	Average......	959	271	0 28		

First premium, $12,00 to Blackfoot, exhibited by M. N. Hood, Guelph, Can.

Second premium, $8.00, to Dick, exhibited by J. A. Brown & Son, Decatur.

Third premium, $5.00, to Jerry, exhibited by Frank Willson, Jackson, Mich.

REPORT OF COMMITTEE.

There were eight sheep of marked excellence in this ring, showing good breeding and feeding qualities, and making a very attractive exhibition.

The first premium was awarded to a fine specimen of the Leicester breed. This wether showed an excess of good points over his competitors, and was more evenly covered with a firmer and better quality of flesh. The first premium wether had been stall fed, with equal parts of peas, oats, bran and green feed.

The second premium was awarded to a Cotswold wether of superior merit, and lacking but little of equaling the first premium animal in handling qualities. This sheep had been on grass summers, and well fed on corn, oats and oil cake since weaning.

The third premium was awarded a good Cotswold wether, not as well filled out as the other premium animals. He had been pastured until about the middle of last August, and since fed corn, oats and clover hay with turnips added during the three weeks preceding the show.

Wether 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882........	Weight Nov. 15, 1882........	Average gain per day in lbs. since birth........	Name of Animal.	Breed.
162	J. A. Brown & Son, Decatur	607	219	0 36	Smut Face	Cotswold ... .
163	" "	607	204	0 34	Upstart	" ....
164	Mrs. Anne Newton, Pontiac, Mich.......	714	251	0 35	Dandy.	" ....
165	Frank Willson, Jackson, Mich	586	180	0 31	Mack	" ....
166	M. N. Hood, Guelph, Can ..	600	295	0 49	Marmion	Leicester ....
167	" " ...	574	215	0 37	Robin Hood......	" ....
	Average	614	227	0.37		

First premium, $12.00 to Marmion, exhibited by M. N. Hood, Guelph, Can.

Second premium, $8.00 to Smut Face, exhibited by J. A. Brown & Son, Decatur.

Third premium, $5.00, to Robin Hood, exhibited by M. N. Hood, Guelph, Can.

REPORT OF COMMITTEE.

The first premium was awarded a Leicester wether, an excellent specimen of a mutton sheep, both as to form and quality of flesh. This sheep had been fed in pen, on peas, oats and bran, with green food.

The second premium was awarded a fine Cotswold wether that lacked but little in handling qualities or other essentials when compared with the first premium wether. This wether had received a liberal supply of corn, oats, oil cake and grass, during the summer.

The third premium was awarded a cross-bred Leicester and Cotswold wether, with hardly as good or even distribution of flesh as the other premium animals. This wether was fed with the first premium wether.

Wether under 1 year.

No.	Exhibiter.	Age in days, Nov 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds since birth	Name of Animal.	Breed.
168	J. A. Brown & Son, Decatur	238	136	0 56	Smut Lamb	Cotswold ....
169	Mrs. Anne Newton, Pontiac. Mich	236	124	0 52	Roger	Lincolnshire ....
170	M. N. Hood, Guelph, Can	235	178	0 75	Jim Kelly .	Leicester.........
	Average...	236	146	0 61		

First premium $12, to Jim Kelly, exhibited by M. N Hood, Guelph, Can.
Second premium $8, to Smut Lamb, exhibited by J. A Brown & Son, Decatur.
Third premium $5, to Roger, exhibited by Mrs Anne Newton, Pontiac, Mich

REPORT OF COMMITTEE

The three very fine lambs in the ring were well worthy of special consideration The first premium was awarded a well developed Leicester, considering his age. This wether was in good flesh, had been on good pasture with liberal allowance of grain since weaning time

The second premium was awarded a Cotswold, a good sheep not quite as well developed as the first premium animal. This sheep had been full fed on corn, oats and oil cake.

The third premium animal was not as well developed for age or as thickly fleshed as his competitors. This lamb had been well fed since the first of May in a pen, on hay and green corn fodder, with a daily ration of one and a half pounds of a mixture of equal parts in weight of corn, oats and wheat midlings.

Ewe 2 and under 3 years.

No.	Exhibiter.	Age in days Nov 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds since birth	Name of Animal.	Breed.
171	J A Brown & Son, Decatur	986	305	0.31	Queen	Cotswold......
172	Mrs. Anne Newton, Pontiac, Mich..........................	988	238	0 24	Big Mary.	Lincolnshire ...
173	Frank Willson, Jackson, Mich...............	975	263	0.27	Maud S.	Cotswold.........
174	Frank Willson, Jackson, Mich	975	256	0 26	Molly.	" ....
	Average..	981	265	0.27		

First premium $12, to Queen, exhibited by J. A. Brown & Son, Decatur.
Second premium $8, to Maud S, exhibited by Frank Willson, Jackson, Mich.
Third premium $5, to Molly, exhibited by Frank Willson, Jackson, Mich.

REPORT OF COMMITTEE.

The four ewes comprising this exhibit were fine in quality and style. The first premium was awarded to a very fine Cotswold, well and evenly fleshed, with good top and bottom lines, and excellent in all the points that make a good mutton carcass. The feed consisted of corn, oats and oil cake while running on good pasture.

The second premium was awarded a very superior Cotswold ewe, and there was but a shade of difference in quality when compared with the first premium ewe.

The third premium was awarded a Cotswold ewe of good form, but did not give promise of killing to as much profit as the other premium animals. The second and third premium animals had been stall fed on corn, oats with rutabagas added during the last three months.

Ewe 1 and under 2 years.

No.	Exhibiter.	Age in days Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds since birth	Name of Animal.	Breed.
175	Mrs. Anne Newton, Pontiac, Mich.	597	204	0.34	Bessie	Lincolnshire
176	Frank Willson, Jackson, Mich.	605	253	0 42	Jennie	Cotswold
	Average	601	228	0 38		

First premium $12, to Jennie, exhibited by Frank Willson, Jackson, Mich.

Second premium $8, to Bessie, exhibited by Miss Anne Newton, Pontiac, Mich.

REPORT OF COMMITTEE,

The two animals shown in this ring were much above the average of good mutton sheep. The first premium was awarded a Cotswold that had been full fed on corn, oats and turnips. This ewe was more evenly covered with a firmer and better quality of flesh than the second premium animal.

Ewe under 1 year.

No.	Exhibiter.	Age in days Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds since birth	Name of Animal.	Breed.
177	Frank Willson, Jackson, Mich.	217	125	0 57	Polly	Cotswold

First premium $12, to Polly, exhibited by Frank Willson, Jackson, Mich.

REPORT OF COMMITTEE.

The lamb entered in this ring was well worthy of a first premium, and considering age was well developed. Beside good pasture this ewe had been full fed on corn, oats and turnips.

LOT 16—MIDDLE WOOLS.

Wether, 2 and under 3 years.

No.	Exhibiter.	Age in days, Nov 15, 1882.......	Weight, Nov. 15, 1882......	Average gain per day in pounds since birth	Name of Animal	Breed.
178	J. H. Potts & Son, Jacksonville	958	210	0 22	Tom..............	Southdown ......
179	J. H. Potts & Son, Jacksonville	958	200	0 21	Dick................	" ......
180	J. H. Potts & Son, Jacksonville	965	210	0 22	Harry	" ......
181	Mrs. Anne Newton, Pontiac, Mich	989	228	0 23	Captor........ ...	Shropshire ......
182	Morgan & Cotton, Rockford	956	241	0 25	Monarch . . .	" ......
183	Morgan & Cotton, Rockford...	949	222	0 23	Milton	" ......
	Average.......	962	218	0 22		

First premium $12, to Tom, exhibited by J H. Potts & Son, Jacksonville.
Second premium $8, to Monarch, exhibited by Morgan & Cotton, Rockford.
Third premium $5, to Dick, exhibited by J. H. Potts & Son, Jacksonville.

REPORT OF THE COMMITTEE.

This ring was composed of three well bred Southdowns and three well bred Shropshires, all showing good development and much quality. These sheep had been full fed on grain.

The first premium was awarded a Southdown, a very superior animal in every respect.

The Shropshire wether awarded second premium was not as blocky in form or so good a handler, yet nearly approaching the first premium animal in quality.

The third premium was awarded a fine specimen of the Southdown breed that lacked but little in general quality and handling.

Wether, 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov 15, 1882....	Weight, Nov. 15, 1882............	Average gain per day in pounds since birth.....	Name of Animal.	Breed.
184	J. H. Potts & Son, Jacksonville...	589	185	0 31	No. 21	Southdown ...
185	J. H. Potts & Son, Jacksonville..............	600	197	0 32	No. 28............	
186	J. H. Potts & Son, Jacksonville..........	589	200	0 34	No. 26............	
187	Mrs. Anne Newton, Pontiac, Mich...............	614	*175	0.28	Tom...	Shropshire
	Average...	598	189	0.31		

* Average weight of car load weighed together.

First premium $12, to Tom, exhibited by Mrs. Anne Newton, Pontiac, Mich.
Second premium $8, to No. 28, exhibited by J. H. Potts & Son, Jacksonville.
Third premium $5, to No. 26, exhibited by J. H. Potts & Son, Jacksonville.

REPORT OF COMMITTEE.

The sheep shown in this ring were well developed for age, and very smooth and evenly fatted.

The first premium was awarded a Shropshire nearly approaching perfection as a mutton sheep. This sheep had been stall fed since the first of May.

The second and third premiums were awarded Southdown sheep of much excellence, and so nearly approached the first premium animal as to make but a shade of difference, and barely enough to make discrimination. The three Southdowns in this ring had been full fed on grain

Wether, under 1 year.

No	Exhibiter.	Age in days, Nov. 15, 1882......	Weight, Nov. 15, 1882	Average gain per day in pounds since birth......	Name of Animal.	Breed.
188	J. H. Potts & Son, Jacksonville	241	93	0 38	No. 32.	Southdown ......
189	J. H. Potts & Son, Jacksonville	245	121	0 49	No. 34.............	" ......
190	J H. Potts & Son, Jacksonville......	250	128	0 51	No. 38	" ......
191	Mrs. Anne Newton, Pontiac, Mich....	226	94	0 42	Luo.....	Shropshire ......
	Average	240	109	0 45		

First premium $12, to No. 38, exhibited by J. H Potts & Son, Jacksonville.
Second premium $8, to No. 34, exhibited by J. H Potts & Son, Jacksonville
Third premium $5, to Lue, exhibited by Mrs. Anne Newton, Pontiac, Mich

REPORT OF COMMITTEE.

The three lambs entered in this ring were of excellent quality, considering age.

The first and second premiums were awarded two well developed and evenly fleshed Southdowns. The first premium animal was a shade lighter, and would cut a larger per cent. of lean meat than the second premium wether.

The third premium was awarded a good specimen of the Shropshire breed, not quite so well filled out as the second premium animal.

Ewe, 2 and under 3 years.

No.	Exhibiter.	Age in days, Nov 15, 1882........ .	Weight, Nov. 15, 1882	Average gain per day in pounds since birth	Name of Animal.	Breed.
192	Mrs. Anne Newton, Pontiac, Mich....	986	220	0 22	Topsy....	Shropshire.......
193	Frank Willson, Jackson, Mich...	958	165	0 17	Chubby...........	Southdown.......
194	Morgan & Cotton, Rockford....	954	210	0.22	Georgie...........	Shropshire ......
195	Morgan & Cotton, Rockford..................	947	178	0 18	Bertie.............	" ....
	Average	961	193	0 19		

First premium $12, to Bertie, exhibited by Morgan & Cotton, Rockford.
Second premium $8, to Chubby, exhibited by Frank Willson, Jackson, Mich.
Third premium $5, to Topsy, exhibited by Mrs. Anne Newton, Pontiac, Mich.

REPORT OF COMMITTEE.

The first premium was awarded to a very complete Shropshire both in form and handling qualities. This sheep had been full grain fed and allowed range of good pasture until three weeks previous to the show.

The second premium was awarded a well developed Southdown and a very close match to the ewe awarded the first premium. This sheep had been stall fed since the middle of August, and from her appearance and condition had not suffered for want of feed previous to that date.

The third premium sheep was a very good Shropshire; that in quality was not quite equal to the first and second premium animals; had been stall fed on green forage and a mixture of corn, oats and bran since May 1, 1882

Ewe, 1 and under 2 years.

No.	Exhibiter	Age in days Nov 15, 1882........	Weight, Nov. 15, 1882...	Average gain per day in pounds since birth.....	Name of Animal.	Breed.
196	Stone & Loake, Stonington..................	624	243	0 39	Miss Winch'ndon	Oxford ....
197	Stone & Loake, Stonington..................	621	248	0 40	Miss Kate...	" ....
198	Stone & Loake, Stonington	620	246	0.40	Rosette....	" ....
199	Stone & Loake, Stonington......................	619	240	0 39	Beatrice.....	" ....
200	Stone & Loake, Stonington	617	225	0 36	Necklace	" ....
	Average....	620	240	0 38		

First premium $12, to Rosette, exhibited by Stone & Loake, Stonington.
Second premium $8, to Miss Winchendon, exhibited by Stone & Loake, Stonington
Third premium $5, to Beatrice, exhibited by Stone & Loake, Stonington.

REPORT OF COMMITTEE.

The individual excellence and uniformity of all the sheep exhibited in this ring were remarkable, and to designate the first, second and third premium animal appeared like an unfair discrimination.

Ewe, under 1 year.

No.	Exhibiter.	Age in days, Nov 15, 1882.........	Weight, Nov. 15, 1882	Average gain per day in pounds since birth.....	Name of Animal.	Breed.
201	Mrs. Anne Newton, Pontiac, Mich............. .. .	240	85	0.35	Nell...............	Shropshire ......

First premium $12, to Nell, exhibited by Mrs Anne Newton, Pontiac, Mich.

REPORT OF COMMITTEE.

There was but one entry in this ring, a fair Shropshire lamb, that was deemed worthy of the first premium.

LOT 17—FINE WOOLS.

Wether, 2 years old or over.—No entry.

Wether, 1 and under 2 years.—No entry.

Wether, under 1 year.—No entry.

Ewe 2 years old or over.

No.	Exhibiter.	Age, in days, Nov. 15, 1882...........	Weight, Nov. 15, 1882......	Average gain per day in lbs. since birth............	Name of Animal.	Breed.
202	E. Peck & Sons, Geneva....	2,783	120	0 04	Queen 104	Merino ....
203	" " ...	958	84	0 09	Long Wool 102 .	" ....
204	Taylor Bros., Waynesville..	2,406	107	0 04	Lady Clark	" ....
205	" " ..	1,312	106	0 08	Jane........... ..	" ....
	Average	1,864	104	0.06		

First premium, $12.00, to Lady Clark, exhibited by Taylor Bros., Waynesville.

Second premium, $8.00, to Queen, exhibited by E. Peck & Sons, Geneva.

Third premium, $5.00, to Long Wool 102, exhibited by E. Peck & Sons, Geneva.

REPORT OF COMMITTEE.

Four remarkably good merino ewes were shown in this ring, all in good flesh and averaging over one hundred pounds per head. The ewes were of such superior merit that breeders offered exorbitant prices to keep them from the shambles.

The several premiums were awarded according to the distribution of fat in the most valuable portions of the carcass. The heavy fleeces did not give much encouragement for much depth of flesh.

Ewe 1 and under 2 years.

No.	Exhibiter.	Age, in days, Nov. 15, 1882...........	Weight, Nov. 15, 1882...............	Average gain per day in lbs. since birth..	Name of Animal.	Breed.
206	E. Peck & Sons, Geneva....	593	69	0.12	Bess 147	Merino... ....

First premium, $12.00, to Bess 147, exhibited by E. Peck & Sons, Geneva.

REPORT OF COMMITTEE.

The only ewe entered in this ring could hardly be considered a good mutton sheep, but under the rules was entitled to a premium.

Ewe under 1 year.

No.	Exhibiter.	Age, in days, Nov. 15, 1882	Weight, Nov. 15, 1882............	Average gain per day in lbs since birth	Name of Animal.	Breed.
207	E. Peck & Sons, Geneva....	228	52	0.23	Daisy 208	Merino ....

First premium, $12.00, to Daisy, exhibited by E. Peck & Sons, Geneva.

LOT 18—GRADES OR CROSSES.

Wether 2 and under 3 years.

No.	Exhibiter.	Age, in days, Nov. 15, 1882	Weight, Nov. 15, 1882	Average gain per day in lbs. since birth	Name of Animal.	Breed.
208	B. Waddel, Marion, O........	1,035	253	0 24	Ben....	Grade Merino....
209	" "	1,032	253	0.25	Will......	" ....
210	" "	1,029	241	0 23	Fant......... ..	" ....
211	M. N. Hood, Guelph, Can ..	924	265	0.29	Fred..........	Grade Oxford....
212	" " ...	918	222	0 24	Willie............	" ....
	Average	987	246	0.25		

First premium, $12.00, to Ben, exhibited by B. Waddel, Marion, O.

Second premium, $8.00, to Fred, exhibited by M. N. Hood, Guelph, Can.

Third premium, $5.00, to Will, exhibited by B. Waddel, Marion, O.

REPORT OF COMMITTEE.

The five sheep entered in this ring made a fine show of mutton sheep. Three of the sheep were cross-bred merino and Cotswold, and two were the result of using Oxford ram upon Leicester ewes. All the sheep were well developed and matured.

The first premium was awarded a grade merino that was the best handler in the ring.

The second premium was awarded a grade Oxford, which was the heaviest sheep in the ring, and nearly as good handler as the first premium animal.

The grade merino awarded the third premium was well covered, but lacked somewhat in handling qualities.

Wether 1 and under 2 years.

No.	Exhibiter.	Age in days Nov. 15, 1882........	Weight Nov. 15, 1882..........	Average gain per day in lbs. since birth.... ..	Name of Animal.	Breed.
213	Fr. Willson, Jackson, Mich	593	237	0.40	Abe..............	Grade Cotswold.
214	M. N. Hood, Guelph, Can...	579	210	0.36	Lord Boyle......	Grade Oxford ...
215	" " ..	596	219	0.36	Professor	Gr'de Shropshire
216	" " ..	585	118	0 20	Walsingham....	Gr'de Southdown
	Average.........	588	196	0 33		

First premium, $12, to Walsingham, exhibited by M. N. Hood, Guelph, Can.
Second premium, $8, to Abe, exhibited by Frank Willson, Jackson, Mich.
Third premium, $5, to Lord Boyle, exhibited by M. N. Hood, Guelph, Can.

REPORT OF COMMITTEE.

The first premium was awarded a grade Oxford which was more evenly fatted than his competitors.

The second premium was awarded a grade Cotswold of much merit, but lacking somewhat in firmness and handling qualities, so noticeable in the first premium animal.

The third premium animal was not as well filled or as desirable a sheep for the butcher as the other premium animals.

Wether under 1 year.

No.	Exhibitor.	Age in days Nov. 15, 1882...	Weight Nov. 15, 1882..........	Average gain per day in lbs. since birth........	Name of Animal.	Breed.
217	M. N. Hood. Guelph, Can	213	118	0 55	Thom.............	Gr'de Shropshire
218	" " ...	212	127	0 59	Dick..............	" "
219	" " ..	211	110	0 52	Harry......... ...	" "
	Average	212	118	0.55		

First premium, $12, to Harry, exhibited by M. N. Hood, Guelph, Can.
Second premium, $8, to Dick, exhibited by M. N. Hood, Guelph, Can.
Third premium, $5, to Thom, exhibited by M. N. Hood, Guelph, Can.

REPORT OF COMMITTEE.

The animals exhibited in this ring were desirable butcher's stock, and showed the good results of crossing Shropshires upon the Cotswold and Leicester grades.

The sheep were nearly mated in good points, and the proportion of lean meat to gross weight likely to be realized influenced the committee in awarding the three premiums.

Ewe 2 and under 3 years.

No.	Exhibiter.	Age in days Nov. 15, 1882	Weight Nov. 15, 1882........	Average gain per day in pounds since birth	Name of Animal.	Breed.
220	Fr. Willson, Jackson, Mich	958	200	0 21	Flora	Grade Cotswold.
221	M. M. Hood, Guelph, Can...	967	270	0 28	Kate.	Gr. Southdown .
222	" " .	968	254	0 26	Belle.	
	Average.	964	241	0 25		

First premium, $12, to Bell, exhibited by M. N. Hood, Guelph, Can.
Second premium, $8, to Kate, exhibited by M. N. Hood, Guelph, Can.
Third premium, $5, to Flora, exhibited by Frank Willson, Jackson, Mich.

REPORT OF COMMITTEE.

There was but little difference in the quality of the three sheep.

The first premium was awarded the sheep having the firmest touch, and promising the largest percentage of lean meat.

The second premium animal was not quite as smooth as the first premium sheep, otherwise a near match.

The third premium sheep was not as compact or evenly fatted animal as the first and second premium winners.

Ewe 1 and under 2 years.

No.	Exhibiter.	Age in days Nov. 15, 1882... .. .	Weight Nov. 15, 1882...........	Average gain per day in lbs. since birth	Name of Animal.	Breed.
223	Fr. Willson, Jackson, Mich.	584	170	0.29	Nannie.	Grade Cotswold.
224	M. N. Hood, Guelph, Can. .	584	219	0 37	Lady Brown	Grade Oxford....
225	" " ..	579	170	0 29	Eugenie	Grade Merino ..
226	" " ...	580	110	0 19	Betsey............	Grade Oxford ...
	Average	581	167	0.28		

First premium, $12, to Lady Brown, exhibited by M. N. Hood, Guelph, Can.
Second premium, $8, to Eugenie, exhibited by M. N. Hood, Guelph, Can.
Third premium, $5, to Nannie, exhibited by Frank Willson, Jackson, Mich.

REPORT OF COMMITTEE.

The first premium was awarded a fine grade Oxford ewe, in fine condition for the block, a cross by Oxford ram upon grade Cotswold and Leicester.

The second premium was awarded a grade Merino, made by using a French Merino ram upon a graded Canadian ewe—this was a fine killing sheep, but lacked in evenness of flesh, when compared with the first premium animal.

The third premium was awarded a good graded Cotswold that was slightly behind his more successful competitors in handling qualities.

Ewe under 1 year.

No.	Exhibiter.	Age in days Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds since birth	Name of Animal.	Breed.
227	M. N. Hood, Guelph, Can...	204	180	0 88	Nannie	Gr'de Shropshire
228	" " "	217	125	0.57	Minnie............	" "
229	" " " ...	218	120	0.55	May...............	Grade Merino....
	Average...................	213	141	0.66		

First premium $12, to Minnie, exhibited by M. N. Hood, Guelph, Can.

Second premium $8, to May, exhibited by M. N. Hood, Guelph, Can.

Third premium $5, to Nannie, exhibited by M. N. Hood, Guelph, Can.

REPORT OF COMMITTEE.

The first premium was awarded a grade Shropshire ewe that was compact, evenly covered with a good quality of firm lean flesh.

The second premium was awarded the oldest and lightest sheep in the ring, but a sheep of excellence and only needing more flesh to have been the equal of the first premium ewe.

The third premium was awarded the heaviest and coarsest sheep in the ring an covered with rather too much fat.

LOT 19—SWEEPSTAKES.

Wether 2 and under 3 years.

No.	Exhibiter.	Age in days Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds since birth	Name of Animal.	Breed.
154	J. A. Brown & Son, Decatur	966	292	0.30	Dick	Cotswold.........
155	" " "	964	247	0.26	Curly	" ....
178	J. H. Potts & Son, Jack'ville	958	210	0.22	Tom	Southdown ......
179	" " "	958	200	0.21	Dick	" ......
180	" " "	965	210	0.22	Harry	" ......
157	F. Willson, Jackson, Mich .	975	263	0.27	Jerry	Cotswold.........
182	Morgan & Cotton, Rockford	956	241	0.25	Monarch.	Shropshire.......
183	" " "	949	222	0.23	Milton	" ....
210	B. Waddel, Marion, O	1,029	241	0.23	Fant	Grade Merino....
159	M. N. Hood, Guelph, Can...	944	260	0.28	Thom Nichols ...	Leicester.........
	Average.................	966	238	0.24		

Premium $25, to Monarch, exhibited by Morgan & Cotton, Rockford.

REPORT OF COMMITTEE.

There were ten magnificent wethers in the ring, each of which was worthy of especial consideration.

The sweepstakes premium was awarded a well quartered Shropshire, smooth and evenly covered with firm mellow flesh and the best handler in the ring.

Wether 1 and under 2.

No.	Exhibiter.	Age in days Nov. 15, 1882	Weight Nov. 15, 1882............	Average gain per day in pounds since birth	Name of Animal.	Breed.
162	J. A. Brown & Son, Decatur	607	219	0.36	Smut Face.	Cotswold.........
163	" " "	607	204	0 34	Upstart	" ....
184	J. H. Potts & Son, Jack'ville	589	185	0 31	No. 21....	Southdown ......
185	" " "	600	197	0 32	No. 28.............	" ......
186	" " "	589	200	0 34	No. 26.............	" ......
213	F. Willson, Jackson, Mich..	593	237	0.40	Abe	Grade Cotswold
214	M. N. Hood, Guelph, Can...	579	210	0 36	Lord Boyle.......	Grade Oxford....
215	" " " ...	596	219	0.36	Professor.........	Gr'de Shropshire
166	" " " ...	600	295	0.49	Marmion.........	Leicester.........
	Average.....................	595	218	0 36		

Premium $25, to Abe, exhibited by Frank Willson, Jackson, Mich.

REPORT OF COMMITTEE.

Considering age, the sheep in this ring were up to a very high standard of excellence. The sweepstakes premium was awarded a grade Cotswold, fine in bone, square and well filled in all his points and excelling his competitors in handling qualities.

Wether under 1 year.

No	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882............	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
168	J. A. Brown & Son, Decatur	238	136	0.56	Smut Lamb	Cotswold.........
188	J.H.Potts & Son, Jacksonv'e	241	93	0.38	No. 32............	Southdown ......
189	" " "	245	121	0.49	No. 34.............	" ......
190	" " "	250	128	0.51	No. 38.............	" ......
170	M. N. Hood, Guelph, Can..	285	178	0 75	Jim Kelly	Leicester.........
217	" " ...	213	118	0 55	Thom.............	Gr'de Shropshire
	Average	237	129	0.54		

Premium, $25, to No. 34, exhibited by J. H. Potts & Son, Jacksonville.

REPORT OF COMMITTEE.

The sweepstakes premium was awarded a Southdown that promised to dress a larger percentage of prime meat to gross than any of his competitors. This wether was well matured for age, and was neat and good in every point.

Ewe 2 and under 3 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
171	J. A. Brown & Son, Decatur	986	305	0.31	Queen	Cotswold
173	Frank Willson, Jackson, Mh	975	263	0.27	Maud S.	"
174	" "	975	256	0.26	Molly	"
194	Morgan & Cotton, Rockford	954	210	0.22	Georgie	Shropshire
221	M. N. Hood, Guelph, Can.	967	270	0.28	Kate	Grade Southd'wn
222	" "	968	254	0.26	Belle	" "
	Average	970	259	0.26		

Premium, $25, to Belle, exhibited by M. N. Hood, Guelph, Can.

REPORT OF COMMITTEE.

The grade Southdown awarded the sweepstakes premium was a blocky, compact sheep, with good top and bottom lines, and in all particulars nearly a perfect sheep.

Ewe 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
196	Stone & Loake, Stonington.	624	243	0.39	Miss Winchendon	Oxford
197	" "	621	248	0.40	Miss Kate	"
198	" "	620	246	0.40	Rosette	"
176	Frank Willson, Jackson, Mh	605	253	0.42	Jennie	Cotswold
	Average	617	247	0.40		

Premium, $25, to Miss Kate, exhibited by Stone & Loake, Stonington.

REPORT OF COMMITTEE.

The sweepstakes premium was awarded to a pure bred Oxford ewe that could be but little improved considering age. It would have been difficult to suggest where this yearling was lacking in form or in handling qualities.

Ewe under 1 year.

No.	Exhibitor.	Age in days, Nov 15, 1882......	Weight Nov. 15, 1882............	Average gain per day, in pounds, since birth......	Name of Animal.	Breed.
177	Frank Willson, Jackson, Mh	217	125	0 57	Folly	Cotswold..... ..
228	M. N. Hood, Guelph, Can ..	217	125	0 57	Minnie	Gr'de Shropshire
229	" " ...	218	120	0 55	May	Grade Merino....
	Average..................	217	123	0 56		

Premium, $25, to Folly, exhibited by Frank Willson, Jackson, Mich.

REPORT OF COMMITTEE.

The sweepstakes premium was awarded the ripest and heaviest sheep in the ring—a well bred and creditable specimen of the Cotswold breed.

LOT 20—GRAND SWEEPSTAKES.

Best Wether or Ewe in the Show.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in lbs. since birth......	Name of Animal.	Breed.
171	J. A. Brown & Son, Decatur	986	305	0 31	Queen.	Cotswold..... .
154	" " "	966	292	0 30	Dick.	" ... .
162	" " "	607	219	0 36	Smut Face........	" ....
178	J. H. Potts & Son, Jack'ville	958	210	0 22	Tom	Southdown ...
179	" " "	958	200	0 21	Dick..	" .... .
180	" " "	965	210	0 22	Harry	" . ...
184	" " "	589	185	0 31	No. 21	" ......
186	" " "	589	200	0 34	No. 26	" . .....
196	Stone & Loake, Stonington	624	243	0 39	Miss Winchend'n	Oxford .. ..
197	" " "	621	248	0 40	Miss Kate.	" ....
198	" " "	620	246	0 40	Rosette	" ....
158	Mrs. Anne Newton, Pontiac, Mich......................	980	306	0.31	Turpin............	Cotswold.........
230	Morgan & Cotton, Rockford	1,325	270	0 20	Model..........	Shropshire.......
182	" " "	956	241	0.25	Monarch.	" ......
183	" " "	949	222	0 23	Milton.............	" ......
231	B. Waddel, Marion, O	954	210	0 22	George	" ......
232	M. N. Hood, Guelph, Can.	1,338	325	0.24	Nellie Ackers	Cotswold.........
221	" " "	967	270	0.28	Kate...............	Grade Southdo'n
222	" " "	968	254	0.26	Belle.......	" "
224	" " "	584	219	0.37	Lady Brown	Grade Oxford....
214	" " "	579	210	0 36	Lord Boyle.......	" " ....
166	" " "	600	295	0 49	Marmion.........	Leicester.........
216	" " "	585	118	0 20	Walsingham	Grade Southdo'n
	Average...................	887	239	0.29		

Premium, $50, to Model, exhibited by Morgan & Cotton, Rockford.

REPORT OF COMMITTEE.

The grand sweepstakes premium was awarded a well bred Shropshire wether, so perfect in all his points as to be considered a model sheep for the butcher, and promising to dress an unusually large proportion of lean meat of superior quality.

LOT 21—HEAVIEST FAT SHEEP—OPEN TO ALL.

Wether or Ewe of any age.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in lbs. since birth	Name of Animal.	Breed.
171	J. A. Brown & Son, Decatur	986	305	0 31	Queen	Cotswold
196	Stone & Loake, Stonington	624	243	0 39	Miss Winchend'n	Oxford
158	Mrs. Anne Newton, Pontiac, Mich	980	306	0.31	Turpin	Cotswold
233	Frank Willson, Jackson, Mich	975	263	0 27	Maud S	"
230	Morgan & Cotton, Rockford	1,325	270	0 20	Model	Shropshire
232	M. N. Hood, Guelph, Can.	1,338	325	0 24	Nellie Ackers	Cotswold
166	" " "	600	295	0 49	Marmion	Leicester
	Average	975	286	0 31		

Premium, $30, to Nellie Ackers, exhibited by M. N. Hood, Guelph, Can.

LOT 22—CAR LOADS.

30 Fat Wethers 2 and under 3 years.

(Average weight, 175 pounds.)

No.	Exhibiter.	Name of Animal.	Breed.
158	Mrs. Anne Newton, Pontiac, Michigan	Turpin	Cotswold
164	" " " "	Dandy	"
234	" " " "	George	"
235	" " " "	No. 1	Shropshire
236	" " " "	" 2	"
237	" " " "	" 3	"
238	" " " "	" 4	"
239	" " " "	" 5	"
240	" " " "	" 6	"
241	" " " "	" 7	"
242	" " " "	" 8	"
243	" " " "	" 9	"
244	" " " "	" 10	"
245	" " " "	" 11	"
246	" " " "	" 12	"
247	" " " "	" 13	"
248	" " " "	" 14	"
249	" " " "	" 15	"
250	" " " "	" 16	"
251	" " " "	" 17	"
252	" " " "	" 18	"
253	" " " "	" 19	"
254	" " " "	" 20	"
255	" " " "	" 21	"
256	" " " "	" 22	"
257	" " " "	" 23	"
258	" " " "	" 24	"
259	" " " "	" 25	"
260	" " " "	" 26	"
261	" " " "	" 27	"

First premium $60, to Car Load, exhibited by Mrs. Anne Newton, Pontiac, Michigan.

REPORT OF COMMITTEE.

The sheep composing the car load lot were Shropshires, with the exception of three animals. All the sheep were well developed and evenly fatted, and worthy of the premium. The sheep had been on pasture until the 8th of July, and from that date until the 25th of September, had been fed in stall a liberal allowance of oats and wheat bran, and other feed.

The condition and appearance of the sheep indicated much skill on the part of the breeder and feeder, and demonstrated the fact that better mutton sheep are not produced in any other country.

CATALOGUE, CLASS D—SWINE.

DAVID GORE, *Superintendent.*

No. Stall	Name and Postoffice of Exhibiter.	Date of birth.	Age, in days	Weight Nov. 15, 1882	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
1	Taylor Bros., Waynesville, Ill	May 28, '81.	536	404	0.75	Queen Anna	Grade Berkshire
1	" "	June 10, '81	523	377	0.72	Jerry	"
1	" "	June 14, '81	519	446	0.86	Jake	"
1	" "	May 28, '81	536	450	0.84	Joseph	"
2	" "	June 20, '81	513	463	0.90	Whitey	Chester White
2	" "	Nov. 18, '81	362	410	1.13	Minnie	"
3	" "	July 1, '81	502	367	0.73	Billy	Berkshire
3	" "	Dec. 20, '81	330	260	0.79	Lake	"
4	" "	June 1, '81	532	405	0.76	Sallie	Essex
4	" "	March 1, '82	259	200	0.77	Rosy	"
4	" "	April 28, '81	566	490	0.87	Beauty	Chester White
5							
6							
7	J. A. Countryman, Rochelle, Ill	May 29, '81	535	430	0.80	Dasher	Poland China
7	" "	July 16, '81	487	403	0.95	Herschel	"
7	" "	Oct. 23, '81	388	384	0.99	Oscar Wilde	"
7	" "	April 26, '81	568	458	0.80	Fraulein	"
8	" "	April 2, '82	227	251	1.11	Sam	"
8	" "	April 2, '82	227	281	1.23	Maud S	"
8	" "	April 2, '82	227	251	1.10	Mollie	"
9	" "	March 23, '81	602	575	0.95	Jumbo	"
9	" "	Nov. 8, '81	372	375	1.00	Charter Oak	"
9	J. A. Brown & Son, Decatur, Ill	April 25, '81	569	650	1.14	Lump	Chester White
9	" "	April 30, '81	564	521	0.92	Lady Brown	"
9	J. A. Countryman, Rochelle, Ill	Feb. 4, '82	284	345	1.21	Royal Duke	Poland China
10	" "	March 28, '81	597	536	0.89	Comet	"
10	" "	Feb. 27, '81	626	501	0.80	Lady Douglas	"
10	" "	June 9, '81	524	450	0.86	Flora B.	"
11	" "	May 29, '81	535	495	0.92	Sweeper	"
11	" "	Sept. 17, '81	424	401	0.94	Hooker	"
11	" "	July 30, '81	473	418	0.88	Ned	"
12	" "	May 12, '81	552	459	0.83	Prairie Queen	"
12	" "	Nov. 27, '81	353	365	1.03	Jennie Y	"

13	J. A. Countryman, Rochelle, Ill	March	, '81	597	520	0.87	Bob	Poland China
13	" "	Sept.	, '81	424	430	1.01	Tom	"
13	" "	April	, '81	581	532	0.92	Kit Kaiser	"
21	Frank Wilson, Jackson, Mich	May	, '82	188	208	1.11	Ted	Essex
21	" "	May	, '82	188	180	0.96	Tom	"
21	" "	May	, '82	188	202	1.07	Mate	"
21	" "	March	, '82	242	298	1.23	Mary	"
24	" "	July	, '81	498	457	0.92	Walter	"
24	" "	Sept.	, '81	439	410	0.93	Major	"
37	Phil D. Miller & Sons, Panora, Iowa	March	, '82	231	33	1.38	Guthrie Queen	Jersey Red
38	Thos. Bennett, Rossville, Ill	Jan.	, '82	291	368	1.26	Muskogee 2d	"
38	" "	Feb.	, '82	262	302	1.15	Muskogee 3d	"
39	Scheidt & Davis, Dyer, Ind	May	, '82	174	220	1.26	Fancy Bird	Victoria
40	J. A. Brown & Son, Decatur, Ill	April	, '82	200	280	1.40	Tom	Chester White
40	" "	April	, '82	200	275	1.37	Folly	"
40	Taylor Bros., Waynesville, Ill	July	, '81	502	390	0.78	Bob	"
40	" "	April	, '81	566	410	0.72	Nancy	"
41	" "	Nov.	, '81	362	410	1.13	Chunky	Poland China
41	" "	March	, '82	259	263	1.00	Philip	Essex
41	" "	March	, '82	259	261	1.00	Rob	"
41	" "	March	, '82	259	220	0.85	Dolly	"
42								
43	Taylor Bros., Waynesville, Ill	Aug.	, '81	471	425	0.90	Emma	Berkshire
43	" "	Dec.	7, '81	343	355	1.03	Emeline	"
43	" "	Dec.	7, '81	343	355	1.03	Jane	"
43	" "	June	4, '78	1,624	676	0.41	Emma 7th	"
44	" "	April	5, '81	589	345	0.59	Bully	"
44	" "	May	10, '81	554	513	0.93	Lord Radnor	"
45	" "	May	22, '81	542	445	0.82	Henry	Poland China
45	" "	May	10, '81	554	450	0.81	William	"
45	" "	June	1, '81	532	440	0.83	Lady Gambrel	"
46	" "	May	15, '81	549	435	0.79	Frank	Essex
46	" "	Sept.	20, '81	421	405	0.96	Sarah	"
46	" "	May	15, '81	549	447	0.81	Joshua	Jersey Red
78	G. W. Stoner, La Place, Ill	Sept.	25, '81	415	533	1.28	Leon	"
78	" "	March	12, '82	248	319	1.28	Peerless	"
78	" "	Sept.	25, '81	416	460	1.10	Bob	"
78	" "	Sept.	25, '81	416	485	1.17	Goodman	"
78	" "	July	1, '81	507	600	1.19	Giant	"
78	" "	Sept.	25, '81	41	489	1.17	Larder	"
78	" "	Sept.	25, '81	416	428	1.03	Fulton	"
78	" "	Sept.	1, '81	440	405	0.92	Cardinal	"
78	" "	May	11, '81	551	481	0.87	Tom	"
78	" "	May	4, '81	560	491	0.88	Rustic	"
78	" "	May	10, '81	554	464	0.84	Planter	Poland Red
81	Harry Davis, Dyer, Ind	June	10, '81	523	422	0.80	Flossy	Victoria
81	Scheidt & Davis, Dyer, Ind	Dec.	28, '81	322	380	1.18	Dick	"
81	" "	Dec.	28, '81	322	382	1.18	Tom	"
81	" "	Feb.	1, '82	287	290	1.01	Harry	"
81	" "	Dec.	1, '81	349	308	0.88	Fatty	Grade Victoria
82	" "	July	16, '81	487	454	0.93	Prince	Victoria
82	" "	July	16, '81	487	439	0.90	Pilot	"

Class D—Swine—Continued.

No. of stall	Name and Postoffice of Exhibiter.	Date of birth.	Age in days	Weight Nov. 15, 1882	Average gain per day in lbs. since birth	Name of Animal.	Breed.
82	Scheidt & Davis, Dyer, Ind	July 8, '81	495	461	0.93	Fanny	Victoria
82	" "	May 25, '81	539	588	1 09	Bouncer	Grade Victoria
82	" "	July 1, '81	502	443	0 88	Joe	"
83	Thos. Bennett, Rossville, Ill	May 11, '81	553	405	0 73	Mary	Jersey Red
83	" "	Jan. 14, '81	670	575	0.86	Fisher	"
83	" "	Jan. 26, '81	658			Colonel	"
83	" "	May 11, '81	553	520	0.94	Tom	"
83	" "	May 11, '81	553	513	0 93	Dick	"
83	" "	May 11, '81	553	480	0 87	Harry	"

TABLE OF MEASUREMENTS, ETC.

No. of Animal	Class, Lot and Name of Animal.	Measurements.						Height from Ground.								Depth from top line to lower shoulder point		Thickness through the crop		Length of back from top of shoulder to loin		Width across the loins		Length of quarter from loin to rump.		Depth from loin to hock		Girth of paunch (middle)		Girth of throat latch.	
								Top line.				Bot. line.																			
		Length of carcass		Heart girth		Flank girth		Shouldr.		Hip		Fore flank		Flank																	
		Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft.	In	Ft	In.	Ft.	In.	Ft.	In	Ft	In	Ft	In
	CLASS D—SWINE.																														
	Lot 24—Berkshires.																														
	Barrow 1 and under 2 years.																														
	FIRST PREMIUM, NO. 264—SECOND PREMIUM, NO. 263—THIRD PREMIUM, NO. 262.																														
262	Bully	4	5	4	9	4	7	2	8	2	10		8		6	1	11	1	6	1	11	1	4	1	3	2	4	4	11	3	6
263	Lord Radnor	4	8	5	4	5	4	2	6	2	9		6		7	1	10	1	8	1	9	1	6	1	5	2	3	5	10	4	....
264	Billy	3	11	4	4	5	2	2	7	2	8		7		8	2	11	1	....	1	9	1	4	1	2	2	3	5	3	3	8
	Barrow under 1 year.																														
	FIRST PREMIUM, NO. 265.																														
265	Lake	3	11	4	3	4	3	2	4	2	4		6		7	1	5	1	4	1	7	1	3	1	2	1	10	4	5	3	2
	Sow 1 and under 2 years.																														
	FIRST PREMIUM, NO. 266.																														
266	Emma	4	4	5	2	5	1	2	9	2	10		6		6	2	1	1	7	1	11	1	3	1	1	2	6	5	4	3	6

Table of Measurements, Etc.—Continued.

No. of Animal	Class, Lot and Name of Animal.	Measurements. Length of carcass. Ft.	Measurements. Length of carcass. In.	Measurements. Heart girth. Ft.	Measurements. Heart girth. In.	Measurements. Flank girth. Ft.	Measurements. Flank girth. In.	Height from Ground. Top line. Should'r Ft.	Height from Ground. Top line. Should'r In	Height from Ground. Top line. Hip.... Ft.	Height from Ground. Top line. Hip.... In.	Height from Ground. Bot. line. Fore flank. Ft.	Height from Ground. Bot. line. Fore flank. In.	Height from Ground. Bot. line. Flank Ft.	Height from Ground. Bot. line. Flank In.	Depth from top line to lower shoulder point .. .. Ft.	Depth from top line to lower shoulder point .. .. In.	Thickness through the crop .. . Ft.	Thickness through the crop .. . In.	Length of back f'm top of shoulder to loin .. .. Ft.	Length of back f'm top of shoulder to loin .. .. In.	Width across the loins .... Ft.	Width across the loins .... In.	Length of quarter from loin to rump. Ft.	Length of quarter from loin to rump. In.	Depth from loin to hock .... Ft.	Depth from loin to hock .... In.	Girth of paunch (middle) .... Ft.	Girth of paunch (middle) .... In.	Girth of throat latch Ft.	Girth of throat latch In.
	Sow under 1 year.																														
	FIRST PREMIUM, NO. 268—SECOND PREMIUM, NO. 267.																														
267	Emeline	4	..	4	8	4	7	2	7	2	7		6		6	1	10	1	5	1	6	1	3	1	3	2	1	4	10	3	1
268	Jane	3	10	4	9	4	5	2	6	2	5		6		5	1	11	1	6	1	6	1	3	1	....	1	10	4	11	3	1
	Lot 25—Poland China.																														
	Barrow 1 and under 2 years.																														
	FIRST PREMIUM, NO. 271—SECOND PREMIUM, NO. 272—THIRD PREMIUM, NO. 274.																														
271	Sweeper	4	6	5	5	5	5	2	10	2	10		7		7	2	3	1	9	1	9	1	8	1	3	2	6	5	6	3	[illegible]
272	Dasher	4	4	5	2	5	2	2	10	2	10		7		7	2	1	1	8	1	9	1	5	1	2	2	5	5	3	3	[illegible]
274	Herschel	4	4	5	3	5	2	2	11	2	10		5		5	2	3	1	11	1	7	1	7	1	2	2	4	5	6	3	[illegible]
	Barrow under 1 year.																														
	FIRST PREMIUM, NO. 282—SECOND PREMIUM, NO. 283.																														
282	Royal Duke	4	1	4	8	4	10	1	6	1	7		7		6	1	11	1	5	1	9	1	4	1	1	2	3	5	...	3	[illegible]
283	Sam	3	6	4	2	4	4	2	3	2	5		6		6	1	7	1	4	1	7	1	1	....	10	2	....	4	5	2	10

Sow 1 and under 2 years.

FIRST PREMIUM, NO. 287—SECOND PREMIUM, NO. 288—THIRD PREMIUM, NO. 284.

284	Lady Douglas	4	7	5	7	5	5	2	11	2	11		6	..	6	2	8	1	11	1	10	1	7	1	2	2	4	5	7	3	9
287	Prairie Queen	4	4	5	1	5		2	9	2	10	..	7	.	7	2	2	1	8	1	11	1	5	1	1	2	4	5	4	3	2
288	Flora B	4	3	5	2	5	2	2	8	2	8		6	..	5	2	1	1	8	1	9	1	6	1	2	2	4	5	5	3	7

Sow under 1 year.

FIRST PREMIUM, NO. 292—SECOND PREMIUM, NO. 291—THIRD PREMIUM, NO. 293.

291	Chunky	4	.	4	9	4	5	2	4	2	4		3	..	3	1	10	1	6	1	7	1	4	....	11	1	11	4	9	3	3
292	Jennie V	4	2	4	9	4	8	2	6	2	8	.	6	..	7	1	9	1	6	1	8	1	3	1	1	2	2	4	11	3	3
293	Maud S	3	8	4	3	4	4	2	3	2	5	..	4	.	5	1	8	1	4	1	7	1	3	1	1	2	....	4	7	3	....

LOT 26—CHESTER WHITE AND VICTORIA.

Barrow 1 and under 2 years.

FIRST PREMIUM, NO. 296—SECOND PREMIUM, NO. 298—THIRD PREMIUM, NO. 295.

295	Lump	5	6	6		5	7	3	3	3	2		7	.	7	2	7	1	11	2	2	1	7	1	4	2	8	6	1	3	11
296	Prince	4	9	5	5	5	4	2	8	2	9	.	7	..	7	2	1	1	7	1	7	1	5	1	4	2	4	5	7	3	7
298	Whitey	4	4	5	1	5	.	2	10	2	10	.	7		6	1	11	1	6	1	10	1	4	1	1	2	3	5	5	3	8

Barrow under 1 year.

FIRST PREMIUM, NO. 300—SECOND PREMIUM, NO. 301—THIRD PREMIUM, NO 299.

299	Tom	4	1	4	3	4	3	2	5	2	6	.	5		4	1	9	1	6	1	7	1	2	1	1	2	...	4	8	3	2
300	Dick	4	3	4	10	4	9	2	7	2	7		6		6	1	11	1	7	1	5	1	3	1	2	2	2	5	....	3	6
301	Tom	4	7	5	1	4	8	2	8	2	9		6	..	7	2	....	1	6	1	6	1	3	1	2	2	2	5	1	3	4

Sow 1 and under 2 years.

FIRST PREMIUM, NO. 305—SECOND PREMIUM, NO. 304—THIRD PREMIUM, NO. 306.

304	Fanny	4	9	5	4	5	3	2	11	2	11		7	.	6	2	3	1	8	1	11	1	5	1	4	2	5	5	4	3	5
305	Beauty	4	7	5	.	5	3	2	8	2	10	.	6	.	5	1	10	1	6	2	....	1	4	1	2	2	2	5	6	3	10
306	Nancy	4	4	4	11	4	11	2	9	2	10	..	7	..	8	2	1	1	6	1	10	1	4	1	....	2	5	5	1	3	5

Table of Measurements, Etc.—Continued.

No. of Animal	Class, Lot and Name of Animal.	Measurements. Length of carcass		Measurements. Heart girth		Measurements. Flank girth		Height from Ground. Top line. Should'r		Height from Ground. Top line. Hip		Height from Ground. Bot. line. Fore flank		Height from Ground. Bot. line. Flank		Depth from top line to lower shoulder point		Thickness through the crop		Length of back from top of shoulder to loin		Width across the loins		Length of quarter from loin to rump		Depth from loin to hock		Girth of paunch (middle)		Girth of throat latch	
		Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft.	In.	Ft.	In	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
	Sow under 1 year.																												
	FIRST PREMIUM, NO. 309—SECOND PREMIUM, NO. 308—THIRD PREMIUM, NO. 307.																												
307	Folly	4	4	4	3	4	2	2	5	2	7	2	6	2	6	1	9	1	3	1	9	1	1	1	2	2	1	4	6	2	11
308	Fancy Bird	3	9	3	9	3	9	2	2	2	2	..	4		5	1	7	1	3	1	4	1	1	...	11	1	8	4	3	2	10
309	Minnie	4	6	5	1	4	10	2	7	2	8	..	6	..	5	1	10	1	6	1	8	1	4	1	1	2	3	5	3	3	3
	LOT 27—ESSEX.																												
	Barrow 1 and under 2 years.																												
	FIRST PREMIUM, NO. 310—SECOND PREMIUM, NO. 313—THIRD PREMIUM, NO. 311.																												
310	Joshua	4	3	5	4	5	3	2	11	2	11	.	6		6	2	2	1	6	1	8	1	5	1	4	2	4	5	6	3	9
311	Frank	4	2	5		4	9	2	9	2	10	.	7	.	7	1	10	1	5	1	8	1	3	1	1	2	2	5	....	3	8
313	Major	4	8	4	10	5	2	2	9	2	9		7	.	6	2	...	1	6	1	10	1	3	1	2	2	4	5	4	3	3
	Barrow under 1 year.																												
	FIRST PREMIUM, NO. 314—SECOND PREMIUM, NO. 315—THIRD PREMIUM, NO. 316.																												
314	Philip	3	10	4	4	4	5	2	2	2	3	..	5	..	5	1	11	1	4	1	6	1	3	1	1	2	....	4	10	3	2
315	Rob	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
316	Ted	3	7	3	9	4		2	2	2	2		6		6	1	7	1	1	1	5	1	....	....	10	1	9	4	1	2	8

	Sow 1 and under 2 years.																												
	FIRST PREMIUM, NO. 318—SECOND PREMIUM, NO. 319.																												
318	Sarah	4	3	4	10	5		2	9	2	8 ..	6	7	1	11	1	6	1	11	1	4	1	2	2	4	5	2	3	7
319	Sallie	3	9	4	6	4	3	2	4	2	5	5	6	1	9	4	3	1	6	1	1	1	...	2	1	4	7	3	5
	Sow under 1 year.																												
	FIRST PREMIUM, NO. 323—SECOND PREMIUM, NO. 320—THIRD PREMIUM, NO. 321.																												
320	Rosy	3	7	3	10	4	1	2	2	2	3	5	6	1	8	1	3	1	6	1	1	..	10	1	10	4	3	2	10
321	Dolly	3	6	4		4		2	2	2	3	5	6	1	8	1	1	1	5	1	1	...	11	1	10	4	3	3	1
323	Mary	3	11	4	6	4	7	2	4	2	5	5.	6	1	9	1	3	1	7	1	2	1	1	2	....	4	9	3	2

REPORTS OF AWARDING COMMITTEES.

CLASS D—SWINE.

LOT 24—BERKSHIRES.

Barrow 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds since birth	Name of Animal.
262	Taylor Bros., Waynesville	589	345	0.59	Bully
263	" " "	544	513	0.93	Lord Radnor
264	" " "	502	367	0.33	Billy
	Average	548	408	0.75	

First premium $20, to Billy, exhibited by Taylor Bros., Waynesville.

Second premium $10, to Lord Radnor. exhibited by Taylor Bros., Waynesville.

Third premium $5. to Bully, exhibited by Taylor Bros., Waynesville.

REPORT OF COMMITTEE.

The barrows entered in this ring were good specimens of butchers stock.

The first premium animal was the smoothest hog in the ring and finer in bone than his competitors.

The second premium barrow was heavier and somewhat coarser than the first premium animal, but a profitable butchers hog.

The third premium was awarded the lightest hog in the ring and lacking symmetry when compared with his more successful competitors.

Barrow under 1 year.

No.	Exhibiter.	Age, in days, Nov. 15, 1882..........	Weight Nov. 15, 1882..........	Average gain per day in pounds, since birth....	Name of Animal.
265	Taylor Bros., Waynesville	330	260	0.79	Lake......................

First premium $20, to Lake, exhibited by Taylor Bros., Waynesville.

REPORT OF COMMITTEE.

The barrow entered in this ring was well worthy of the premium, having good form and was well filled in the best parts, not only a profitable animal to the feeder but the butcher.

Sow 1 and under 2 years.

	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882..........	Average gain per day, in pounds, since birth	Name of Animal.
....	471	425	0.90	Emma....................

First premium $20, to Emma, exhibited by Taylor Bros., Waynesville.

REPORT OF COMMITTEE.

The sow awarded the first premium had made good average gain per day, had a good form, was well matured with heavy hams, well filled loins, deep sides and shoulders in good proportion to make the carcass cut to profit.

Sow under 1 year.

No.	Exhibiter.	Age in days, Nov. 15, 1882..........	Weight Nov. 15, 1882...	Average gain per day, in pounds, since birth	Name of Animal.
267	Taylor Bros., Waynesville............	343	355	1.03	Emeline.....................
268	" " "	343	390	1.10	Jane........................
	Average......................	343	372	1 06	

First premium $20, to Emeline, exhibited by Taylor Bros., Waynesville.

Second premium, $10, to Jane, exhibited by Taylor Bros., Waynesville.

REPORT OF COMMITTEE.

The competing animals were of the same age and had received the same attention. The first premium was awarded the lighter animal owing to the better distribution of meat and the indications of cutting to greater profit.

LOT 25—POLAND CHINA.

Barrow 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882........	Weight Nov. 15, 1882...	Average gain per day in lbs. since birth..........	Name of Animal.
269	J. A. Countryman, Rochelle..........	579	520	0 87	Bob........................ ...
270	" "	597	536	0 89	Comet......................
271	" "	535	495	0 92	Sweeper......... ....
272	" "	535	430	0 80	Dasher......................
273	" "	473	418	0.88	Ned..........................
274	" "	487	463	0.95	Herschel....................
275	" "	424	430	1.01	Tom ....
276	" "	424	401	0 94	Hooker. ....
277	" "	388	384	0 99	Oscar Wilde ....
278	" "	372	375	1.00	Charter Oak ....
279	" "	602	575	0 95	Jumbo......................
280	Taylor Bros., Waynesville............	542	445	0 82	Henry ....
281	" "	554	450	0 81	William ....
	Average...............................	502	455	0 91	

First premium, $20, to Sweeper, exhibited by J. A. Countryman, Rochelle.
Second premium, $10, to Dasher, exhibited by J. A. Countryman, Rochelle.
Third premium, $5, to Herschel, exhibited by J. A. Countryman, Rochelle.

REPORT OF COMMITTEE.

The thirteen animals composing this ring were very superior specimens, and all were much above an average of profitable butchers' stock.

The barrow awarded the first premium nearly approached a model hog for the block; had straight top, bottom and side lines, evenly quartered, thickly and evenly covered with flesh, neat in head and fine in bone.

The second premium animal was not as smooth as the first premium barrow, but rather finer in bone, not as heavy in proportion to age, but a very profitable hog for the feeder and butcher.

The third premium barrow nearly approached the first and second premium animals, lacking in evenness, and was a trifle coarser, but heavier than the second premium hog.

Barrow under 1 year.

No.	Exhibiter.	Age, in days, Nov. 15, 1882..........	Weight Nov. 15, 1882..........	Average gain per day in pounds, since birth......	Name of Animal.
282	J. A. Countryman, Rochelle..........	284	345	1 21	Royal Duke................
283	" "	227	251	1 11	Sam ....
	Average	255	298	1.16	

First premium, $20, to Royal Duke, exhibited by J. A. Countryman, Rochelle.
Second premium, $10, to Sam, exhibited by J. A. Countryman, Rochelle.

REPORT OF COMMITTEE.

The barrows entered in this ring showed good development; both were superior specimens, and would cut an unusually large proportion of net to gross.

The first premium animal excelled his competitor in average gain per day, and was the smoother of the two.

Sow 1 and under 2 years.

No.	Exhibiter.	Age, in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds, since birth	Name of Animal.
284	J. A. Countryman, Rochelle	626	501	0.80	Lady Douglas
285	" "	581	532	0.92	Kit Kaiser
286	" "	568	458	0.80	Fraulien
287	" "	552	459	0.83	Prairie Queen
288	" "	524	450	0.86	Flora B.
289	Harry Davis, Dyer, Ind	523	422	0.80	Flossy
290	Taylor Bros., Waynesville	532	440	0.83	Lady Gambrel
	Average	558	466	0.83	

First premium, $20, to Prairie Queen, exhibited by J. A. Countryman Rochelle.
Second premium, $10, to Flora B, exhibited by J. A. Countryman, Rochelle.
Third premium, $5, to Lady Douglas, exhibited by J. A. Countryman, Rochelle.

REPORT OF COMMITTEE.

The seven animals shown in this ring could be but little improved.

The first premium was awarded the best formed packing hog in the ring—a very smooth and evenly fatted sow, with straight lines, good back, heavy hams, well proportioned shoulders and deep sides.

The second premium was awarded a sow lacking but little of the finish and quality so noticeable in the make-up of the first premium animal

The third premium sow was rather coarser in shoulder and deficient in loin when compared with the first and second premium animals.

Sow under 1 year.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds, since birth	Name of Animal.
291	Taylor Bros., Waynesville	362	410	1.13	Chunky
292	J. A. Countryman, Rochelle	353	365	1.03	Jennie V.
293	" "	227	281	1.23	Maud S.
294	" "	227	251	1.10	Mollie
	Average	292	326	1.12	

First premium, $20, to Jennie V, exhibited by J. A. Countryman, Rochelle.
Second premium, $10, to Chunky, exhibited by J. A. Countryman, Rochelle.
Third premium, $5, to Maud S, exhibited by J. A. Countryman, Rochelle.

REPORT OF COMMITTEE.

The first premium was awarded to the most compact and evenly fatted animal in the ring. This sow had made the least average gain per day of any in the ring, but excelled in form and quality.

The second premium was awarded the fattest sow in the ring, a very low, blocky animal, rather too fat to ensure nicely marbled meat likely to be found in the first premium animal.

The sow awarded the third premium was rather coarser than the first and second premium animals, and lacked in filling of hams and sides.

LOT 26—CHESTER WHITE AND VICTORIA.

Barrow, 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882..........	Weight Nov. 15, 1882..........	Average gain per day in pounds since birth......	Name of Animal.	Breed.
295	J. A. Brown & Son, Decatur	569	650	1.14	Lump.............	Chester White...
296	Scheidt & Davis, Dyer, Ind.	487	454	0.93	Prince............	Victoria..........
297	" "	487	439	0 90	Pilot..............	"
298	Taylor Bro., Waynesville. .	513	463	0 90	Whitey...........	Chester White..
	Average	514	501	0 96		

First premium, $20, to Prince, exhibited by Scheidt & Davis, Dyer, Ind.

Second premium, $10, to Whitey, exhibited by Taylor Bros., Waynesville.

Third premium, $5, to Lump, exhibited by J. A. Brown & Son, Decatur.

REPORT OF COMMITTEE.

The first premium was awarded one of the youngest and lightest barrows in the ring. This animal was finer in bone, more compact, had the straightest lines and was the best packing hog competing.

The second premium was awarded a good animal, not as well topped as the first premium barrow.

The third premium animal was larger, heavier in bone, with not as well proportioned quarters as the first and second premium animals, and had made the largest average gain per day of any animal in the ring, but lacked firmness and handling qualities.

Barrow, under 1 year.

No.	Exhibiter.	Age in days Nov. 15, 1882..........	Weight Nov. 15, 1882..........	Average gain per day in pounds since birth......	Name of Animal.	Breed.
299	J. A. Brown & Son, Decatur	200	280	1 40	Tom..	Chester White ..
300	Scheidt & Davis, Dyer. Ind.	322	380	1 18	Dick..............	Victoria... ......
301	" "	322	382	1.18	Tom............ ..	"
302	" "	287	290	1 01	Harry............	"
	Average	282	333	1 19		

First premium, $20, to Dick, exhibited by Scheidt & Davis, Dyer, Ind.

Second premium, $10, to Tom, exhibited by Scheidt & Davis, Dyer, Ind.

Third premium, $5, to Tom, exhibited by J. A. Brown & Son, Decatur.

REPORT OF COMMITTEE.

Two of the hogs entered in this ring, farrowed in December, had made an average gain per day of 1 18 pounds; another barrow, farrowed the last of April, showed an average gain per day of 1.40 pounds.

There was but slight difference in the quality and make-up of the first and second premium animals; the barrow awarded the first premium was somewhat more symmetrical than the second premium barrow.

The third premium barrow had made the largest average gain per day of any animal in the ring, but when compared with his more successful rivals, lacked in smoothness and symmetry.

Sow, 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882........	Weight Nov. 15, 1882...........	Average gain per day in lbs. since birth..........	Name of Animal.	Breed.
303	J. A. Brown & Son, Decatur	564	521	0 92	Lady Brown....	Chester White ..
304	Scheidt & Davis, Dyer, Ind.	495	461	0 93	Fanny...........	Victoria..........
305	Taylor Bros., Waynesville	566	490	0 87	Beauty	Chester White
306	" "	566	410	0 72	Nancy............	" .
	Average.	547	468	0.86		

First premium, $20, to Beauty, exhibited by Taylor Bros., Waynesville.

Second premium, $10, to Fanny, exhibited by Scheidt & Davis, Dyer, Ind.

Third premium, $5, to Nancy, exhibited by Taylor Bros., Waynesville.

REPORT OF COMMITTEE.

The sow awarded the first premium had a better back and heavier ham in proportion to weight than the other animals competing.

The second premium animal nearly approached the first premium sow except in the matter of early maturity.

The third premium was awarded the lightest animal in the ring, lacking but little in the profitable distribution of meat so noticeable in the first and second premium sows.

Sow under 1 year.

No.	Exhibiter.	Age in days, Nov. 15, 1882........	Weight Nov. 15, 1882	Average gain per day in lbs. since birth..	Name of Animal.	Breed.
307	J. A. Brown & Son, Decatur	200	275	1 37	Folly.............	Chester White ..
308	Scheidt & Davis, Dyer, Ind.	174	220	1 26	Fancy Bird	Victoria..........
309	Taylor, Bros., Waynesville	362	410	1 13	Minnie	Chester White..
	Average...................	245	301	1 25		

First premium, $20, to Minnie, exhibited by Taylor Bros., Waynesville.

Second premium, $10, to Fancy Bird, exhibited by Scheidt & Davis, Dyer, Ind.

Third premium, $5, to Folly, exhibited by J. A. Brown & Son, Decatur.

REPORT OF COMMITTEE.

There was a wide range in the ages of the animals competing in this ring.

The first premium was awarded the oldest and heaviest sow in the ring, an animal showing the least average gain per day. This sow had the best ham and was well proportioned throughout, and a very profitable animal for the butcher.

The second premium sow was the lightest sow in the ring, but not heavy enough to cut to as great profit as the first premium hog.

The third premium sow had made the largest average gain per day, but was not so evenly proportioned as the other two, and lacked the fine finish of the first premium animal.

LOT 27—ESSEX.

Barrow, 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in lbs. since birth	Name of Animal.
310	Taylor Bros., Waynesville	549	447	0 81	Joshua
311	" "	549	435	0 79	Frank
312	Frank Willson, Jackson, Mich	498	457	0.92	Walter
313	" "	439	410	0 93	Major
	Average	508	437	0.86	

First premium, $20, to Joshua, exhibited by Taylor Bros., Waynesville.

Second premium, $10, to Major, exhibited by Frank Willson, Jackson, Mich.

Third premium, $5, to Frank, exhibited by Taylor Bros., Waynesville.

REPORT OF COMMITTEE.

The first premium was awarded the smoothest and best proportioned barrow in the ring, finer in bone than his rivals, and by his compact form gave assurances of cutting to greater profit.

The second premium was awarded the barrow having made the largest average gain per day, but the youngest and lightest animal in the ring, and but little behind the first premium animal in profitable distribution of meat.

The third premium was awarded one of the oldest hogs in the ring; a good specimen but lacking in finish, when compared with the first and second premium barrows.

Barrow under 1 year.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds since birth	Name of Animal.
314	Taylor Bros., Waynesville	259	263	1.00	Philip
315	" "	259	261	1.00	Rob
316	Frank Willson, Jackson, Mich	188	208	1.11	Ted
317	" "	188	180	0.96	Tom
	Average	223	228	1.01	

First premium, $20, to Philip, exhibited by Taylor Bros., Waynesville.

Second premium, $10.00, to Rob, exhibited by Taylor Bros., Waynesville.

Third premium, $5.00, to Ted, exhibited by Frank Willson, Jackson, Mich.

REPORT OF COMMITTEE.

The barrows entered in this ring were a very smooth, attractive and profitable lot.

There was but slight difference in the first and second premium animals. The first had rather better back and larger ham in proportion to weight.

The third premium barrow had made the largest average gain per day of any barrow in the ring, but was rather heavier in bone and coarser than the first and second premium animals.

Sow 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882..........	Weight Nov. 15, 1882.......... ...	Average gain per day in pounds since birth......	Name of Animal.
318	Taylor Bros., Waynesville	421	405	0 96	Sarah ....
319	" "	532	405	0 76	Sallie ....
	Average..........	476	405	0 86	

First premium, $20, to Sarah, exhibited by Taylor Bros., Waynesville.

Second premium, $10, to Sallie, exhibited by Taylor Bros., Waynesville.

REPORT OF COMMITTEE.

The competing animals were evenly matched as to weight and general appearance.

The first premium was awarded the sow that had made the largest average gain per day. This sow had a shade better back and loin, and was finer in bone.

Sow under 1 year.

No.	Exhibiter.	Age in days Nov. 15, 1882	Weight Nov. 15, 1882.......... ...	Average gain per day in pounds since birth	Name of Animal.
320	Taylor Bros., Waynesville........ ..	259	200	0.77	Rosy.........................
321	" "	259	220	0 85	Dolly . ...
322	Frank Willson, Jackson, Mich........	188	202	1 07	Mate...... ....
323	" "	242	298	1 23	Mary..........................
	Average..................	237	230	0 98	

First premium. $20' to Mary, exhibited by Frank Willson, Jackson, Mich.

Second premium, $10, to Rosy, exhibited by Taylor Bros., Waynesville.

Third premium; $5.00, to Dolly, exhibited by Taylor Bros., Waynesville.

REPORT OF COMMITTEE.

The first premium sow nearly approached the butcher's standard of excellence, with good top, bottom and side lines, and was more symmetrical than the other animals in this ring.

The second premium sow was not as smooth as the first, but a very profitable killing hog, although the lightest in the ring.

The third premium animal was more rangy, not as smooth, with a larger proportion of side meat than the first and second best.

LOT 28—GRADES OR CROSSES.

Barrow 1 and under 2 years.

No.	Exhibiter.	Age, in days, Nov. 15, 1882	Weight Nov. 15, 1882...	Average gain per day in pounds, since birth	Name of Animal.	Breed.
324	Scheidt & Davis, Dyer, Ind.	539	588	1 09	Bouncer..........	Grade Victoria ..
325	" "	502	443	0 88	Joe	" ..
326	Taylor Bros., Waynesville..	519	446	0 86	Jake	Grade Berkshire
327	Thos. Bennett, Rossville....	553	520	0 94	Tom	Jersey Red.......
328	" " ...	553	513	0 93	Dick	" ....
329	" " ...	553	480	0.87	Harry	" ....
330	Taylor Bros., Waynesville..	536	450	0 84	Joseph	Grade Berkshire
331	" " ..	528	377	0 72	Jerry	"
	Average	534	477	0 89		

First premium, $20, to Bouncer, exhibited by Scheidt & Davis, Dyer, Ind.

Second premium, $10, to Jake, exhibited by Taylor Bros., Waynesville.

Third premium, $5, to Tom, exhibited by Thomas Bennett, Rossville.

REPORT OF COMMITTEE.

The first premium was awarded the heaviest hog in the ring, and the one having made the largest average gain per day. This animal, considering size, was fine in bone, and would cut to greater profit for the butcher than any of his rivals.

The second premium animal was nearly as good as the first, a compact, well proportioned barrow, but lacking growth and finish of the first premium hog.

The third premium hog had made good growth, but was rather coarser than the first and second premium barrows.

Barrow under 1 year.

No.	Exhibiter.	Age in days, Nov. 15, 1882..........	Weight Nov. 15, 1882............	Average gain per day, in pounds since birth......	Name of Animal.	Breed.
332	Scheidt & Davis, Dyer, Ind.	349	308	0.88	Fatty	Grade Victoria...
333	Thomas Bennett, Rossville.	291	368	1.26	Muskogee 2d ...	Jersey Red ......
334	" "	262	302	1.15	Muskogee 3d....	" ......
	Average	300	326	1.09		

REPORT OF COMMITTEE.

The three hogs in this ring were not up to the standard required in a show of butcher's stock, and no premiums were awarded.

Sow 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882.........	Average gain per day in lbs. since birth	Name of Animal.	Breed.
335	Thos. Bennett, Rossville...	553	405	0 73	Mary	Jersey Red.......
336	Taylor Bros., Waynesville..	536	404	0 75	Queen Anna	Grade Berkshire
	Average	544	404	0 74		

First premium, $20.00. to Queen Anna, exhibited by Taylor Bros., Waynesville.
Second premium, $10.00, to Mary, exhibited by Thos. Bennett, Rossville

REPORT OF COMMITTEE.

The first premium animal was the youngest, and had made the largest average gain per day of any in the ring. This sow was finer in bone, and promised a better quality of meat.

Sow under 1 year.

No.	Exhibiter.	Age in days, Nov. 15, 1882.........	Weight Nov. 15, 1882	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
337	P.D.Miller & Son, Panora, Ia	231	320	1 38	Guthrie Queen	Jersey Red ......

First premium, $20, to Guthrie Queen, exhibited by Phil. D. Miller & Son, Panora, Ia.

REPORT OF COMMITTEE.

The only entry in this ring was a nicely proportioned sow, that had made a large average gain per day, and was considered well worthy of the first premium.

LOT 29—SWEEPSTAKES.

Barrow 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight, Nov. 15, 1882	Average gain per day in lbs. since birth	Name of Animal.	Breed.
295	J. A. Brown & Son, Decatur	569	650	1 14	Lump	Chester White
269	J. A. Countryman, Rochelle	597	520	0.87	Bob	Poland China
270	" "	597	536	0 89	Comet	"
271	" "	535	495	0 92	Sweeper	"
272	" "	535	430	0.80	Dasher	"
273	" "	473	418	0.88	Ned	"
274	" "	487	463	0 95	Herschel	"
275	" "	421	430	1 01	Tom	"
276	" "	424	401	0 94	Hooker	"
277	" "	388	384	0.99	Oscar Wilde	"
278	" "	372	375	1.00	Charter Oak	"
279	" "	602	575	0 95	Jumbo	"
296	Scheidt & Davis, Dyer, Ind.	487	454	0 93	Prince	Victoria
324	" "	539	588	1 09	Bonneer	Grade Victoria
262	Taylor Bros.. Waynesville.	589	345	0 59	Bully	Berkshire
302	" "	513	463	0 90	Whitey	Chester White
326	" "	519	446	0 86	Jake	Grade Berkshire.
327	Thos. Bennett, Rossville	554	520	0 94	Tom	Jersey Red
338	G. W. Stoner LaPlace	416	533	1 28	Leon	"
312	Fr. Willson, Jackson, Mich.	498	457	0.92	Walter	Essex
313	" "	439	410	0 93	Major	"
339	G. W. Stoner, LaPlace	502	600	1.19	Grant	Jersey Red
340	" "	416	489	1 17	Larder	"
	Average	498	477	0 96		

Premium, $25, to Sweeper, exhibited by J. A. Countryman, Rochelle.

REPORT OF COMMITTEE.

The sweepstakes premium was awarded a Poland China barrow of much excellence, showing a large average gain per day, and promising an unusually profitable carcass for the butcher and consumer.

This animal was somewhat heavier than the average weight of the animals in the ring, and in proportions and profitable distribution of meat could be but little improved.

Barrow under 1 year.

No.	Exhibiter.	Age in days, Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
299	J. A. Brown & Son, Decatur	200	280	1.40	Tom	Chester White
300	Scheidt & Davis, Dyer, Ind.	322	380	1 18	Dick	Victoria
301	" "	322	382	1.18	Tom	"
314	Taylor Bros., Waynesville.	259	263	1 00	Philip	Essex
315	" "	259	261	1.00	Rob	"
333	Thomas Bennett, Rossville.	291	368	1 26	Muskogee 2d	Jersey Red
316	Fr. Willson, Jackson, Mich.	188	208	1.11	Ted	Essex
317	" "	188	180	0 96	Tom	"
282	J. A. Countryman, Rochelle	284	345	1.21	Royal Duke	Poland China
283	" "	227	251	1.11	Sam	"
	Average	254	291	1.14		

Premium, $25, to Royal Duke, exhibited by J. A. Countryman, Rochelle.

REPORT OF COMMITTEE.

The ring was made up of a very superior lot of hogs, representing the following breeds: Chester White, Victoria, Essex, Jersey Red and Poland Chinas.

The sweepstakes premium was awarded a pure bred Poland China barrow of fine finish and good development that would cut to greater profit than the other animals in the ring.

Sow 1 and under 2 years.

No.	Exhibiter.	Age in days Nov. 15, 1882...	Weight, Nov. 15, 1882..........	Average gain per day in lbs. since birth	Name of Animal.	Breed.
303	J. A Brown & Son, Decatur	564	521	0.92	Lady Brown	Chester White...
224	J. A. Countryman, Rochelle	626	501	0 80	Lady Douglas..	Poland China....
285	" "	581	532	0 92	Kit Kaiser........	" " ....
286	" "	568	458	0 80	Fraulein	" " ....
287	" "	552	459	0 83	Prairie Queen...	" " ....
288	" "	524	450	0 86	Flora B..........	" " ....
304	Scheidt & Davis, Dyer, Ind.	495	461	0 93	Fanny...........	Victoria ....
305	Taylor Bros., Waynesville.	566	490	0 87	Beauty..........	Chester White...
318	" "	421	405	0 96	Sarah............	Essex ....
266	" "	471	425	0 90	Emma	Berkshire ... .
289	Harry Davis, Dyer, Ind	523	422	0 80	Flossy.	Poland China....
	Average	535	465	0 87		

Premium, $25, to Sarah, exhibited by Taylor Bros., Waynesville.

REPORT OF COMMITTEE.

The Essex sow awarded the sweepstakes premium had made the largest average gain per day of any animal in the ring. This sow was compact, and more evenly quartered than the other sows, and a very fine model of a packer's hog.

Sow under 1 year.

No.	Exhibiter.	Age in days Nov. 15, 1882..........	Weight Nov. 15, 1882	Averge gain per day in pounds since birth......	Name of Animal.	Breed.
307	J. A. Brown & Son, Decatur	200	275	1.37	Folly..	Chester White ..
292	J. A. Countryman, Rochelle	353	365	1 03	Jennie V.	Poland China....
293	" " "	227	281	1 23	Maude S..........	" " ....
267	Taylor Bros., Waynesville..	343	290	0 84	Emeline.........	Berkshire. ......
205	" " "	362	410	1 18	Chunky..........	Poland China....
341	G. W. Stoner, LaPlace......	248	319	1.28	Peerless..........	Jersey Red.......
322	Frank Willson, Jackson, Michigan.......	188	202	1.07	Mate	Essex ....
323	Frank Willson, Jackson, Michigan.	242	298	1 23	Mary	" ....
337	Phil. D. Miller & Son, Panora, Iowa.............	231	320	1.38	Guthrie Queen...	Jersey Red.......
	Average..................	266	306	1.17		

Premium, $25, to Jennie V, exhibited by J. A. Countryman, Rochelle.

REPORT OF COMMITTEE.

The Poland China sow awarded the honors in this class showed good breeding, and was a very attractive animal for the butcher, excelling the other choice specimens in fineness of bone and profitable distribution of meat.

LOT 30—GRAND SWEEPSTAKES.

Best Barrow or Sow in the Show.

No.	Exhibiter.	Age in days Nov. 15, 1882....	Weight Nov. 15, 1882,...........	Average gain per day in pounds since birth......	Name of Animal.	Breed.
295	J. A. Brown & Son, Decatur	569	650	1.14	Lump.............	Chester White...
299	" " " "	200	280	1.40	Tom.	" " ..
303	" " " "	564	521	0.92	Lady Brown	" " .
307	" " " "	200	274	1.37	Folly..............	" " ..
338	G. W. Stoner, LaPlace	416	533	1.28	Leon......	Jersey Red.......
269	J. A. Countryman, Rochelle	597	520	0.87	Bob...............	Poland China....
270	" " "	597	536	0.89	Comet	" " ....
271	" " "	535	495	0.92	Sweeper..........	" " ....
272	" " "	535	430	0.80	Dasher.	" " ...
273	" " "	473	418	0.88	Ned	" " ....
274	" " "	487	463	0.95	Herschel	" " ....
275	" " "	424	430	1.01	Tom	" " ....
276	" " "	424	401	0.94	Hooker	" " ....
277	" " "	388	384	0.99	Oscar Wilde......	" " ....
278	" " "	372	375	1.00	Charter Oak......	" " ...
279	" " "	602	575	0.95	Jumbo....	" " ....
282	" " "	284	345	1.21	Royal Duke......	" " ....
283	" " "	227	251	1.11	Sam	" " ....
284	" " "	626	501	0.80	Lady Douglas...	" " ....
285	" " "	581	532	0.92	Kit Kaiser.......	" " ....
286	" " "	568	458	0.80	Franloin	" " ...
287	" " "	552	459	0.83	Prairie Queen....	" " . .
288	" " "	524	450	0.86	Flora B..	" " ....
292	" " "	351	365	1.03	Jennie V..	" " ....
293	" " "	227	281	1.23	Maude S	" " ....
294	" " "	227	351	1.10	Mollie	" " ...
296	Scheidt & Davis, Dyer, Ind.	487	454	0.93	Prince...	Victoria ... .
324	" " "	539	588	1.09	Bouncer	Grade Victoria .
304	" " "	495	461	0.93	Fanny	Victoria ....
300	" " "	322	380	1.18	Dick	" ....
301	" " "	322	382	1.18	Tom........... ..	" ....
266	Taylor Bros., Waynesville.	589	345	0.59	Bully	Berkshire ....
298	" " "	513	463	0.90	Whitey	Chester White .
318	" " "	421	405	0.96	Sarah............	Essex............
306	" " "	566	410	0.72	Nancy	Chester White...
327	Thos. Bennett, Rossville..	553	520	0.94	Tom...............	Jersey Red.......
313	Frank Willson, Jackson, Michigan....	439	410	0.93	Major..............	Essex..............
289	Harry Davis, Dyer, Ind ..	523	422	0.80	Flossy.	Poland China....
290	Taylor Bros., Waynesville..	533	440	0.83	Lady Gambrel .	" " ....
339	G. W. Stoner, LaPlace......	502	600	1.19	Giant	Jersey Red ......
340	" " "	416	489	1.17	Larder............	" " ......
337	Phil. D. Miller & Son, Panora, Iowa	231	320	1.38	Guthrie Queen	" " ......
	Average..................	452	434	0.99		

Premium, $50, to Bully, exhibited by Taylor Bros., Waynesville.

REPORT OF COMMITTEE.

The Berkshire barrow awarded the highest honors of the show was well worthy of the award.

The hog was short in leg and fine in bone considering weight, had well proportioned quarters with good top, bottom and side lines, and would cut an unusually large proportion of well marbled fine grained meat to gross weight.

This hog gave promise of furnishing a carcass of better quality than his competitors and was the equal of any in form and style.

LOT 31—HEAVIEST FAT HOG.

(Open to all.)

Heaviest Barrow or Sow of any age.

No.	Exhibter.	Age in days Nov. 15, 1882	Weight Nov. 15, 1882	Average gain per day in pounds since birth	Name of Animal.	Breed.
295	J. A. Brown & Son, Decatur	569	650	1.14	Lump	Chester White
324	Scheidt & Davis, Dyer Ind.	539	588	1.09	Bouncer	Grade Victoria
342	Taylor Bros., Waynesville.	1624	676	0.41	Emma 7th	Berkshire
270	J. A. Countryman, Rochelle	597	536	0.89	Comet	Poland China
279	" " "	602	575	0.95	Jumbo	" "
	Average	786	605	0.89		

Premium, $30, to Emma 7th, exhibited by Taylor Bros., Waynesville.

LOT 32—FAT BARROWS.

Lot of 10 Fat Barrows 1 and under 2 years.

LOT NO. 1.

No.	Exhibiter.	Age in days Nov 15, 1882	Weight, Nov. 15, 1882	Average gain per day in lbs. since birth	Name of Animal.	Breed.
262	Taylor Bros., Waynesville	589	345	0.59	Bully	Berkshire
263	" " "	554	513	0.93	Lord Radnor	"
264	" " "	502	367	0.73	Billy	"
298	" " "	513	463	0.90	Whitey	Chester White
343	" " "	502	390	0.78	Bob	" "
280	" " "	542	445	0.8.	Henry	Poland China
281	" " "	554	450	0.81	William	" "
326	" " "	519	446	0,86	Jake	Grade Berkshire
330	" " "	536	450	0.84	Joseph	" "
331	" " "	523	377	0.72	Jerry	" "
	Average	533	424	0.79		

LOT NO. 2.

270	J. A. Countryman, Rochelle	597	536	0.89	Comet	Poland China
269	" " "	597	520	0.87	Bob	"
271	" " "	535	405	0.92	Sweeper	"
272	" " "	535	430	0.80	Dasher	"
274	" " "	487	463	0.95	Herschel	"
273	" " "	473	418	0.88	Ned	"
275	" " "	424	430	1.01	Tom	"
276	" " "	424	401	0.94	Hooker	"
277	" " "	388	384	0.99	Oscar Wilde	"
278	" " "	372	375	1.00	Charter Oak	"
	Average	483	445	0.92		

Lot No. 3.

No.	Exhibiter.	Age in days, Nov 15, 1882........	Weight, Nov. 15, 1882....	Average gain per day in pounds since birth.....	Name of Animal.	Breed.
338	G. W. Stoner, LaPlace......	416	533	1 28	Leon..............	Jersey Red......
344	" "	416	460	1 10	Bob	" ......
345	" "	416	485	1 17	Goodman....	" ......
339	" "	502	600	1 19	Giant.............	" ......
340	" "	416	489	1 17	Larder............	" ......
346	" "	416	428	1 03	Fulton............	" ......
347	" "	440	405	0.92	Cardinal.........	" ......
348	" "	551	481	0.87	Tom.	" ......
349	" "	560	491	0 88	Rustic	" ......
350	" "	554	464	0 84	Planter.	" ......
	Average......	468	483	1 04		

First premium $60, to Lot No. 2, exhibited by J. A. Countryman, Rochelle.

Second premium $30, to Lot No. 1, exhibited by Taylor Bros., Waynesville.

REPORT OF COMMITTEE.

___ first premium lot of barrov
than the other lots, and equally as good in other particulars.

The second premium lot were finer in bone and would cut to greater profit than the third lot, which were rather coarse.

LOT 33--DRESSED CARCASS.

Carcass of Barrow 1 and under 2 years.

No	Exhibitor.	Age in days Nov 15, 1882.........	Weight, Nov. 15, 1882....	Average gain per day in pounds since birth.....	Name of Animal.	Breed.
324	Scheidt & Davis, Dyer, Ind.	539	588	1 09	Bouncer..........	Grade Victoria..
340	G. W. Stoner, LaPlace	416	489	1.17	Larder..........	Jersey Red.......
264	Taylor Bros., Waynesville.	502	367	0.73	Billy....	Berkshire ....
	Average....................	485	481	0 99		

Premium $10, to Bouncer, exhibited by Scheidt & Davis, Dyer, Ind.

REPORT OF COMMITTEE.

The premium was awarded a grade Victoria whose carcass was of better quality than the other carcasses competing with a larger percentage of lean meat.

Carcass of Barrow under 1 year old.

No.	Exhibiter.	Age in days, Nov 15, 1882..........	Weight, Nov. 15, 1882..............	Average gain per day in pounds since birth......	Name of Animal.	Breed.
300	Scheidt & Davis, Dyer, Ind	322	380	1 18	Dick	Victoria ....
314	Thos. Bennett, Rossville .	291	368	1.26	Muskogee 2d....	Jersey Red.......
315	Taylor Bros., Waynesville.	259	261	1 00	Bob	Essex............
	Average.....................	290	336	1.14		

Premium $10, to Dick, exhibited by Scheidt & Davis, Dyer, Ind.

REPORT OF COMMITTEE.

The carcass awarded the premium was the heaviest of any competing, with heavier hams in proportion to gross weight than the other two.

This carcass would cut to better profit than the others.

LIST OF AWARDS.

FIFTH ANNUAL FAT STOCK SHOW,

CHICAGO, NOVEMBER 16-23, 1882.

CLASS A—CATTLE.

WILLIAM SMITH, *Superintendent.*

LOT 1—SHORTHORN—THOROUGHBRED.

Best Steer or Spayed Heifer 3 and under 4 years—5 entries.

First premium, H. & I. Groff, Elmira, Canada	$30 00
Second premium, J. H. Potts & Son, Jacksonville	20 00
Third premium, C. Dodge & Son, South New Lyme, Ohio	10 00

Best Steer or Spayed Heifer 2 and under 3 years—no entry.

Best Steer or Spayed Heifer 1 and under 2 years—3 entries.

First premium, Canada West Farm Stock Association, Brantford, Canada	30 00
Second premium, Cobb & Phillips, Kankakee	20 00
Third premium, Cobb & Phillips, Kankakee	10 00

Best Cow 3 years old or over—8 entries.

First premium, J. H. Potts & Son, Jacksonville	30 00
Second premium, S. E. Prather, Springfield	20 00
Third premium, Canada West Farm Stock Association, Brantford, Canada	10 00

LOT 2—HEREFORDS—THOROUGHBRED.

Best Steer or Spayed Heifer 3 and under 4 years—1 entry.

First premium, M. H. Cochrane, Compton, Canada	$30 00

Best Steer or Spayed Heifer 2 and under 3 years—3 entries.

First premium, Earl & Stuart, Lafayette, Ind.	30 00
Second premium, A. A. Crane & Son, Osco	20 00

Best Steer or Spayed Heifer 1 and under 2 years—1 entry.

First premium, A. A. Crane & Son, Osco	$30 00

Best Cow 3 years old or over—2 entries.

First premium, T. L. Miller Co., Beecher	30 00
Second premium, Fowler & VanNatta, Fowler, Ind	20 00

LOT 3—DEVONS—THOROUGHBRED.

No entries.

LOT 4—OTHER PURE BEEF BREEDS (not named).

No entries.

LOT 5—GRADES OR CROSSES.

Best Steer or Spayed Heifer 3 and under 4 years—24 entries.

First premium, D. M. Moninger, Galvin, Iowa	$30 00
Second premium, J. H. Potts & Son, Jacksonville	20 00
Third premium, H. & I. Groff, Elmira, Canada	10 00

Best Steer or Spayed Heifer 2 and under 3 years—19 entries.

First premium, D. M. Moninger, Galvin, Iowa	30 00
Second premium, John D. Gillett, Elkhart	20 00
Third premium, D. M. Moninger, Galvin, Iowa	10 00

Best Steer or Spayed Heifer 1 and under 2 years—17 entries.

First premium, J. H. Potts & Son, Jacksonville	30 00
Second premium, Fowler & VanNatta, Fowler, Ind	20 00
Third premium, C. M. Culbertson, Chicago	10 00

Best Cow 3 years old or over—3 entries.

First premium, John D. Gillett, Elkhart	30 00
Second premium, C. Dodge & Son, South New Lyme, Ohio	20 00
Third premium, D. M. Moninger, Galvin, Iowa	10 00

LOT 6—SWEEPSTAKES RINGS—OPEN TO ALL.

Best Steer or Spayed Heifer 3 and under 4 years—20 entries.

Premium, D. M. Moninger, Galvin, Iowa	$50 00

Best Steer or Spayed Heifer 2 and under 3 years—17 entries.

Premium, Earl & Stuart, Lafayette, Ind.	50 00

Best Steer or Spayed Heifer 1 and under 2 years—13 entries.

Premium, J. H. Potts & Son, Jacksonville	50 00

Best Cow 3 years old or over—9 entries.

Premium, J. H. Potts & Son, Jacksonville	50 00

LOT 7—GRAND SWEEPSTAKES—OPEN TO ALL.

Best Steer, Spayed Heifer or Cow in the show—27 entries.

Premium, John D. Gillett, Elkhart	$100 00

LOT 8—CAR LOADS.

Best lot of 8 Cattle 3 and under 4 years old—4 entries.

First premium, John D. Gillett, Elkhart	$150 00
Second premium, D. M. Moninger, Galvin, Iowa	75 00

Best lot of 10 Cattle 2 and under 3 years old—3 entries.

First premium, D. M. Moninger, Galvin, Iowa	150 00
Second premium, John D. Gillett, Elkhart	75 00

Best lot of 12 Cattle 1 and under 2 years old—1 entry.

First premium, John D. Gillett, Elkhart	150 00

LOT 9—DRESSED CARCASS.

Best Carcass of Steer or Spayed Heifer 3 and under 4 years old—5 entries.

Premium, M. H. Cochrane, Compton, Canada	$50 00

Best Carcass of Steer or Spayed Heifer 2 and under 3 years—3 entries.

Premium, H. Norris & Sons, Aurora	50 00

Best Carcass of Steer or Spayed Heifer 1 and under 2 years—3 entries.

Premium, J. H. Potts & Son, Jacksonville	50 00

LOT 10—DRESSED CARCASS—SWEEPSTAKES.

Best Carcass of Steer or Spayed Heifer of any age—11 entries.

Premium, M. H. Cochrane, Compton, Canada	$75 00

LOT 11—HEAVIEST FAT STEER—OPEN TO ALL AGES—7 entries.

First premium, John B. Sherman, Chicago	$75 00
Second premium, Allen Varner, Indianola	50 00
Third premium, John B. Sherman, Chicago	25 00

LOT 12—EARLY MATURITY.

Steer or Spayed Heifer showing the greatest average gain per day since birth.

Steer or Spayed Heifer 3 and under 4 years—11 entries :

First premium, H. & I. Groff, Elmira, Canada	$50 00
Second premium, H. & I. Groff, Elmira, Canada	25 00

Steer or Spayed Heifer 2 and under 3 years—8 entries :

First premium, John D. Gillett, Elkhart	50 00
Second premium, George B. Welsh, Tallula	25 00

Steer or Spayed Heifer 1 and under 2 years—12 entries :

First premium, Cobb & Phillips, Kankakee	50 00
Second premium, John D. Gillett, Elkhart	25 00

LOT 13—COST OF PRODUCTION.

Best Steer or Spayed Heifer 3 and under 4 years—2 entries :

First premium, H. & I. Groff, Elmira, Canada	$65 00
Second premium, H. & I. Groff, Elmira, Canada	35 00

Best Steer or Spayed Heifer 2 and under 3 years—3 entries :

First premium, George B. Welsh, Tallula	65 00
Second premium, H. Norris & Sons, Aurora	35 00

Best Steer or Spayed Heifer 1 and under 2 years—4 entries :

First premium, G. S. Burleigh, Mechanicsville, Iowa	65 00
Second premium, Cobb & Phillips, Kankakee	35 00

CLASS B—HORSES.

DAVID E. BEATY, *Superintendent.*

LOT 14—HORSES—(11 ENTRIES)—NO AWARDS.

CLASS C—SHEEP.

E. B. DAVID, *Superintendent.*

LOT 15—LONG WOOLS.

Best Wether 2 and under 3 years—8 entries :

First premium, Marion N. Hood, Guelph, Canada	$12 00
Second premium, J. A. Brown & Son, Decatur	8 00
Third premium, Frank Willson, Jackson, Michigan	5 00

Best Wether 1 and under 2 years—6 entries :

First premium, Marion N. Hood, Guelph, Canada	12 00
Second premium, J A. Brown & Son, Decatur	8 00
Third premium, Marion N. Hood, Guelph, Canada	5 00

Best Wether under 1 year—3 entries :

First premium, Marion N. Hood, Guelph, Canada	12 00
Second premium, J. A. Brown & Son, Decatur	8 00
Third premium, Mrs. Anne Newton, Pontiac, Michigan	5 00

Best Ewe 2 and under 3 years—4 entries :

First premium, J. A. Brown & Son, Decatur	12 00
Second premium, Frank Willson, Jackson, Michigan	8 00
Third premium, Frank Willson, Jackson, Michigan	5 00

Best Ewe 1 and under 2 years—2 entries :

First premium, Frank Willson, Jackson, Michigan	12 00
Second premium, Mrs. Anne Newton, Pontiac, Michigan	8 00

Best Ewe under 1 year—1 entry :

First premium, Frank Willson, Jackson, Michigan	12 00

Lot 16—MIDDLE WOOLS.

Best Wether 2 and under 3 years—6 entries :

First premium, J. H. Potts & Son, Jacksonville	$12 00
Second premium, Morgan & Cotton, Rockford	8 00
Third premium, J. H. Potts & Son, Jacksonville	5 00

Best Wether 1 and under 2 years—4 entries :

First premium, Mrs. Anne Newton, Pontiac, Michigan	12 00
Second premium, J. H. Potts & Son, Jacksonville	8 00
Third premium, J. H. Potts & Son, Jacksonville	8 00

Best Wether under 1 year—4 entries :

First premium, J. H. Potts & Son, Jacksonville	12 00
Second premium, J. H. Potts & Son, Jacksonville	8 00
Third premium, Mrs. Anne Newton, Pontiac, Michigan	5 00

Best Ewe 2 and under 3 years—4 entries :

First premium, Morgan & Cotton, Rockford	12 00
Second premium, Frank Willson, Jackson, Michigan	8 00
Third premium, Mrs. Anne Newton, Pontiac, Michigan	5 00

Best Ewe 1 and under 2 years—5 entries :

First premium, Stone & Loake, Stonington	12 00
Second premium, Stone & Loake, Stonington	8 00
Third premium, Stone & Loake, Stonington	5 00

Best Ewe under 1 year—1 entry :

First premium, Mrs. Anne Newton, Pontiac, Michigan	12 00

Lot 17—FINE WOOLS.

Best Ewe 2 and under 3 years—4 entries :

First premium, Taylor Bros., Waynesville	$12 00
Second premium, E. Peck & Sons, Geneva	8 00
Third premium, E. Peck & Sons, Geneva	5 00

Best Ewe 1 and under 2 years—1 entry :

First premium, E. Peck & Sons, Geneva	12 00

Best Ewe under 1 year—1 entry :

First premium, E. Peck & Sons, Geneva	12 00

Lot 18—GRADES OR CROSSES.

Best Wether 2 and under 3 years—5 entries :

First premium, B. Waddel, Marion, Ohio	$12 00
Second premium, Marion N. Hood, Guelph, Canada	8 00
Third premium, B. Waddel, Marion, Ohio	5 00

Best Wether 1 and under 2 years—4 entries :

First premium, Marion N. Hood, Guelph, Canada	12 00
Second premium, Frank Willson, Jackson, Michigan	8 00
Third premium, Marion N. Hood, Guelph, Canada	5 00

Best Wether under 1 year—3 entries:

First premium, Marion N. Hood, Guelph, Can	$12 00
Second premium, Marion N. Hood, Guelph, Can	8 00
Third premium, Marion N. Hood, Guelph, Can	5 00

Best Ewe 2 and under 3 years—3 entries:

First premium, Marion N. Hood, Guelph, Can	12 00
Second premium, Marion N. Hood, Guelph, Can	8 00
Third premium, Frank Willson, Jackson, Mich	5 00

Best Ewe 1 and under 2 years—4 entries:

First premium, Marion N. Hood, Guelph, Can	12 00
Second premium, Marion N. Hood, Guelph, Can	8 00
Third premium, Frank Willson, Jackson, Mich	5 00

Best Ewe under 1 year—3 entries:

First premium, Marion N. Hood, Guelph, Can	12 00
Second premium, Marion N. Hood, Guelph, Can	8 00
Third premium, Marion N. Hood, Guelph, Can	5 00

LOT 19—SWEEPSTAKES—OPEN TO ALL.

Best Wether 2 and under 3 years—10 entries:

Premium, Morgan & Cotton, Rockford	$25 00

Best Wether 1 and under 2 years—9 entries:

Premium, Frank Willson, Jackson, Mich	25 00

Best Wether under 1 year—6 entries:

Premium, J. H. Potts & Son, Jacksonville	25 00

Best Ewe 2 and under 3 years—6 entries:

Premium, Marion N. Hood, Guelph, Can	25 00

Best Ewe 1 and under 2 years—4 entries:

Premium, Stone & Leake, Stonington	25 00

Best Ewe under 1 year—3 entries:

Premium, Frank Willson, Jackson, Mich	25 00

LOT 20—GRAND SWEEPSTAKES—OPEN TO ALL.

Best Wether or Ewe in the Show—23 entries:

Premium, Morgan & Cotton, Rockford	$50 00

LOT 21—HEAVIEST FAT SHEEP—OPEN TO ALL.

Heaviest Wether or Ewe, any age—7 entries:

Premium, Marion N. Hood, Guelph, Can	$30 00

LOT 22—CAR-LOADS.

Best car-load 30 fat Wethers 2 and under 3 years—1 entry:

First premium, Mrs. Anne Newton, Pontiac, Mich	$60 00

LOT 23—DRESSED CARCASS.

No Entries.

CLASS D—SWINE.

DAVID GORE—*Superintendent.*

LOT 24—BERKSHIRES.

Best Barrow 1 and under 2 years—3 entries:

First premium, Taylor Bros., Waynesville	$20 00
Second premium, Taylor Bros., Waynesville	10 00
Third premium, Taylor Bros., Waynesville	5 00

Best Barrow under 1 year—1 entry:

First premium, Taylor Bros., Waynesville	20 00

Best Sow 1 and under 2 years—1 entry:

First premium, Taylor Bros., Waynesville	20 00

Best Sow under 1 year—2 entries.

First premium, Taylor Bros., Waynesville	20 00
Second premium, Taylor Bros., Waynesville	10 00

LOT 25—POLAND CHINA.

Best Barrow 1 and under 2 years—13 entries:

First premium, J. A. Countryman, Rochelle	$20 00
Second premium, J. A. Countryman, Rochelle	10 00
Third premium, J. A. Countryman, Rochelle	5 00

Best Barrow under 1 year—2 entries:

First premium, J. A. Countryman, Rochelle	20 00
Second premium, J. A. Countryman, Rochelle	10 00

Best Sow 1 and under 2 years—7 entries:

First premium, J. A. Countryman, Rochelle	20 00
Second premium, J. A. Countryman, Rochelle	10 00
Third premium, J. A. Countryman, Rochelle	5 00

Best Sow under 1 year—4 entries:

First premium, J. A. Countryman, Rochelle	20 00
Second premium, Taylor Bros., Waynesville	10 00
Third premium, J. A. Countryman, Rochelle	5 00

LOT 26—CHESTER WHITE AND VICTORIAS.

Best Barrow 1 and under 2 years—4 entries.

First premium, Scheidt & Davis, Dyer, Ind	$20 00
Second premium, Taylor Bros., Waynesville	10 00
Third premium, J. A. Brown & Son, Decatur	5 00

Best Barrow under 1 year—4 entries.

First premium, Scheidt & Davis, Dyer, Ind	20 00
Second premium, Scheidt & Davis, Dyer, Ind	10 00
Third premium, J. A. Brown & Son, Decatur	5 00

Best Sow 1 and under 2 years—4 entries.

First premium, Taylor Bros., Waynesville	20 00
Second premium, Scheidt & Davis, Dyer, Ind	10 00
Third premium, Taylor Bros., Waynesville	5 00

Best Sow, under 1 year—3 entries.

First premium, Taylor Bros., Waynesville	20 00
Second premium, Scheidt & Davis, Dyer, Ind	10 00
Third premium, J. A. Brown & Son, Decatur	5 00

LOT 27—ESSEX.

Best Barrow, 1 and under 2 years—4 entries.

First premium, Taylor Bros., Waynesville	$20 00
Second premium, Frank Willson, Jackson, Mich	10 00
Third premium, Taylor Bros., Waynesville	5 00

Best Barrow under 1 year—4 entries.

First premium, Taylor Bros., Waynesville	20 00
Second premium, Taylor Bros., Waynesville	10 00
Third premium, Frank Willson, Jackson, Mich	5 00

Best Sow 1 and under 2 years—2 entries.

First premium, Taylor Bros., Waynesville	20 00
Second premium, Taylor Bros., Waynesville	10 00

Best Sow under 1 year—4 entries.

First premium, Frank Willson, Jackson, Mich	20 00
Second premium, Taylor Bros., Waynesville	10 00
Third premium, Taylor Bros., Waynesville	5 00

LOT 28—GRADES OR CROSSES.

Best Barrow 1 and under 2 years—8 entries.

First premium, Scheidt & Davis, Dyer, Ind	$20 00
Second premium, Taylor Bros., Waynesville	10 00
Third premium, Thomas Bennett, Rossville	5 00

Best Sow 1 and under 2 years—2 entries.

First premium, Taylor Bros., Waynesville	20 00
Second premium, Thomas Bennett, Rossville	10 00

Best Sow under 1 year—1 entry.

First premium, Phil. D. Miller & Sons, Panora, Iowa	20 00

LOT 29—SWEEPSTAKES—OPEN TO ALL.

Best Barrow 1 and under 2 years—23 entries.

Premium, J. A. Countryman, Rochelle	$25 00

Best Barrow under 1 year—10 entries.

Premium, J. A. Countryman, Rochelle	25 00

Best Sow 1 and under 2 years—11 entries.

Premium, Taylor Bros., Waynesville	25 00

Best Sow under 1 year—9 entries.

Premium, J. A. Countryman, Rochelle	25 00

LOT 30—GRAND SWEEPSTAKES—OPEN TO ALL.

Best Barrow or Sow in the show—42 entries.

Premium, Taylor Bros., Waynesville.	$50 00

LOT 31—HEAVIEST FAT HOG—OPEN TO ALL.

Heaviest Barrow or Sow of any age—31 entries.

Premium, Taylor Bros., Waynesville	$30 00

LOT 32—FAT BARROWS.

Best lot of 10 fat Barrows 1 and under 2 years—3 entries.

First premium, J. A. Countryman, Rochelle	$60 00
Second premium, Taylor Bros., Waynesville	30 00

LOT 33—DRESSED CARCASS.

Best Carcass of Barrow 1 and under 2 years—3 entries.

Premium, Scheidt & Davis, Dyer, Ind	$10 00

Best Carcass of Barrow under 1 year—3 entries.

Premium, Scheidt & Davis, Dyer, Ind	10 00

CLASS E—POULTRY.

H. D. EMERY, *Superintendent.*

LOT 34—TURKEYS.

Best Turkey Cock, old.

First premium, Bush & Blodgett, Downer's Grove	$3 00
Second premium, Harry Davis, Dyer, Ind	2 00

Best Turkey Cock, young.

First premium, Bush & Blodgett, Downer's Grove	3 00
Second premium, Harry Davis, Dyer, Ind	2 00

Best Turkey Hen, old.

First premium, Bush & Blodgett, Downer's Grove	3 00
Second premium, Bush & Blodgett, Downer's Grove	2 00

Best Turkey Hen, young.

First premium, Bush & Blodgett, Downer's Grove	3 00
Second premium, Harry Davis, Dyer, Ind	2 00

Heaviest fat Turkey.

Premium, Bush & Blodgett, Downer's Grove	5 00

LOT 35—GEESE.

Best Gander, old.

First premium, Bush & Blodgett, Downer's Grove	$3 00
Second premium, Harry Davis, Dyer, Ind	2 00

Best Gander, young.

First premium, Harry Davis, Dyer, Ind	3 00
Second premium, Harry Davis, Dyer, Ind	2 00

Best Goose, old.

First premium, Bush & Blodgett, Downer's Grove	3 00
Second premium, Harry Davis, Dyer, Ind	2 00

Best Goose, young.

First premium, Harry Davis, Dyer, Indiana	$3 00
Second premium, Harry Davis, Dyer, Indiana	2 00

Heaviest Fat Gander.

Premium, Bush & Blodgett, Downer's Grove	5 00

LOT 36—DUCKS.

Best Drake, old.

First premium, Bush & Blodgett, Downer's Grove	3 00
Second premium, Harry Davis, Dyer, Indiana	2 00

Best Drake, young.

First premum, Harry Davis, Dyer, Indiana	$3 00
Second premium, Harry Davis, Dyer, Indiana	2 00

Best Duck, old.

First premium, Harry Davis, Dyer, Indiana	3 00
Second premium, Harry Davis, Dyer, Indiana	2 00

Best Duck, young.

First premium, Harry Davis, Dyer, Indiana	3 00
Second premium, Harry Davis, Dyer, Indiana	2 00

Heaviest Fat Drake.

Premium, Bush & Blodgett, Downer's Grove	5 00

LOT 37—ASIATIC FOWLS.

Best Cock.

First premium, Harry Davis, Dyer, Indiana	$3 00
Second premium, Bush & Blodgett, Downer's Grove	2 00

Best Cockrel.

First premium. Harry Davis, Dyer, Indiana	3 00
Second premium, Harry Davis, Dyer, Indiana	2 00

Best Hen.

First premium. Harry Davis, Dyer, Indiana	3 00
Second premium, Harry Davis, Dyer, Indiana	2 00

Best Pullet.

First premium, Harry Davis, Dyer, Indiana	3 00
Second premium, Harry Davis, Dyer. Indiana	2 00

Heaviest Fat Fowl.

Premium, Harry Davis, Dyer, Indiana	5 00

LOT 38—ALL OTHER VARIETIES OF FOWL THAN ASIATICS.

Best Cock.

First premium, Bush & Blodgett, Downer's Grove	$3 00
Second premium, Harry Davis, Dyer, Indiana	2 00

Best Cockrel.

First premium, Bush & Blodgett, Downer's Grove	3 00
Second premium, Harry Davis, Dyer, Indiana	2 00

Best Hen.

First premium, Bush & Blodgett, Downer's Grove	3 00
Second premium, Harry Davis, Dyer, Indiana	2 00

Best Pullet.

First premium, Bush & Blodgett, Downer's Grove	3 00
Second premium, Harry Davis, Dyer, Indiana	2 00

Heaviest Fat Fowl.

Premium, Bush & Blodgett, Downer's Grove	$5 00

Lot 39—DRESSED POULTRY.

Best Dressed Cock.

First premium, Bush & Blodgett, Downer's Grove	$3 00
Second premium, Harry Davis, Dyer, Indiana	2 00

Best Dressed Cockrel.

First premium, Harry Davis, Dyer, Indiana	3 00
Second premium, Bush & Blodgett, Downer's Grove	2 00

Best Dressed Hen.

First premium, Harry Davis, Dyer, Indiana	3 00
Second premium, Bush & Blodgett, Downer's Grove	2 00

Best Dressed Pullet.

First premium, Bush & Blodgett, Downer's Grove	3 00
Second premium, Harry Davis, Dyer, Indiana	2 00

Heaviest Fat Fowl.

Premium, Bush & Blodgett, Downer's Grove	5 00

Lot 40—DISPLAYS, ETC.

Best Capon.

Premium, Harry Davis, Dyer, Indiana	$8 00

Best Display Live Fat Poultry.

Premium, Harry Davis, Dyer, Indiana	15 00

Best Display Dressed Poultry.

Premium, Bush & Blodgett, Downer's Grove	15 00

SECRETARY'S REPORT.

The results of the five Fat Stock Shows are briefly given herewith, for convenience of ready reference, and to enable the reader to critically examine and compare the different rings of the various breeds of stock exhibited at these shows.

The pure breeds and crosses will be reported upon in the order they appear in the classification of premiums.

The averages of the rings, of the several ages of animals and breeds, for the five years, are first given, followed by table giving age, weight and gain of the first premium animals exhibited therein each year.

The excellent results obtained by feeders of the animals exhibited at former Shows have been improved upon, in several rings, by the stock exhibited in 1882.

The increasing interest in the matter of early maturity has not diverted the attention of feeders from the essential matter of extra quality, which has and always will influence the awards of committees. The question of early maturity, other essential qualities being equal, will doubtless influence the award in favor of the animal making the largest average gain per day since birth.

In compiling the following statistics, it has been the purpose of the writer simply to give the official figures, without comment, leaving the reader free to draw his own inference as to the merits of the respective meat breeds of animals exhibited.

The superior quality of butchers' stock exhibited at the Fifth Annual Fat Stock Show has not been approached by the same number of animals previously exhibited.

The matter of extra quality is deservedly attracting more attention at each succeeding Show, and the fine finish, excellent handling quality, fineness of bone, and other evidences of light offal, and cutting a large proportion of net to gross, was noticeable in the stock awarded premiums at the late Show.

CLASS A—CATTLE.

SHORTHORNS.

Shorthorn Steer 4 years old or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	2	1,891	2,262	1.19
1879	5	1,861	2,358	1.28

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	1,880	2,085	1.11
1879	1,578	2,240	1 42

Shorthorn Steer 3 and under 4 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	2	1,250	2,087	1.67
1879	2	1,326	2,039	1 53
1880	4	1,300	2,172	1.66
1881	3	1,364	2,093	1.53
1882	5	1,339	2,141	1.59

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	1,280	2,115	1.65
1879	1,335	2,060	1.54
1880	1,367	2,350	1 71
1881	1,309	2,150	1 64
1882	1,305	2,585	1.94

Shorthorn Steer 2 and under 3 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	5	934	1,621	1.73
1879	3	871	1,624	1.86
1880	5	942	1,801	1.92
1881	7	963	1,634	1.69
1882	....	....	....	....

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	969	1,705	1.76
1879	845	1,686	1.98
1880	1,064	1,815	1.70
1881	1,085	1,895	1.74
1882	...	...	...

Shorthern Steer 1 and under 2 years.

Year	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	3	672	1,385	2 06
1879	5	638	1,267	2 00
1880	1	721	1,590	2.20
1881	...	...	...	...
1882	3	480	1,288	2.72

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	650	1,480	2.28
1879	701	1,316	1 87
1880	721	1,590	2.20
1881	...	...	...
1882	645	1,620	2.51

Shorthorn Cow 3 years old or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	6	2,937	1,722	0 72
1879	8	2,364	1,786	0 81
1880	3	3,031	1,618	0 59
1881	4	2,109	1,756	0 83
1882	8	2,106	1,808	0.85

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	1,721	2,075	1 20
1879	2,035	1,769	0.86
1880	2,136	1,710	0.80
1881	1,873	1,875	1 00
1882	1,404	1,865	1.32

HEREFORDS.

Hereford Steer 4 years old or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	1	2,692	2,010	0.75
1879	4	1,639	1,994	1 28

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	2,692	2,010	0.75
1879	1,677	2,043	1.22

Hereford Steer 3 and under 4 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	3	1,346	1,735	1 26
1879	2	1,389	1,973	1 41
1880	1	1,183	1,875	1 58
1881	2	1,233	1,947	1 57
1882	1	1,121	1,765	1 57

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	1,336	1,705	1 20
1879	1,359	1,968	1 44
1880	1,183	1,875	1 58
1881	1,224	1,965	1.60
1882	1,121	1,765	1.57

Hereford Steer 2 and under 3 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	1	1,080	1,470	1.36
1879	1	939	1,474	1.57
1880	3	943	1,798	1.85
1881				
1882	3	954	1,626	1.70

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	1,080	1,470	1.36
1879	939	1,474	1.57
1880	866	1,650	1.91
1881			
1882	1,077	1,940	1.80

Hereford Steer 1 and under 2 years

	En ries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878				
1879	3	577	1,230	2.15
1880	1	710	1,115	1.57
1881				
1882	1	697	1,330	1.90

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878			
1879	712	1,397	1.96
1880	710	1,115	1.57
1881			
1882	697	1,330	1.90

Hereford Cow 3 years old or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	3	2,179	1,630	0.78
1879	2	3,663	1,615	0.56
1880	1	1,350	1,720	1 27
1881	3	1,782	1,435	0.82
1882	2	2,880	1,672	0.65

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	1,677	1,595	0.95
1879	2,018	1,780	0.85
1880	1,350	1,720	1.27
1881	2,243	1,560	0.69
1882	3,943	1,800	0.45

DEVONS.

Devon Steer 4 years or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	2	655	1,757	1.06
1879				

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	1,658	1,645	0.99
1879			

Devon Steer 3 and under 4 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	2	1,319	1,565	1.18
1879	1	1,335	1,509	1.12
1880	2	1,330	1,220	0.93
1881	2	1,298	1,152	0.88
1882				

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	1,371	1,655	1.21
1879	1,335	1,509	1.12
1880	1,335	1,270	0.91
1881	1,268	1,075	0.84
1882			

Devon Steer 2 and under 3 years.

Year.	Entries.	Average age in days.	Weight.	Average gain per day in lbs. since birth.
1878				
1879				
1880	1	849	1,250	1.46
1881	3	926	977	1.05
1882				

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878			
1879			
1880	849	1,250	1.46
1881	969	975	1.00
1882			

Devon Steer 1 and under 2 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878				
1879	1	483	844	1.74
1880				
1881	3	609	792	1.30
1882				

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878			
1879	483	844	1.74
1880			
1881	614	835	1 36
1882			

Devon Cow 3 years old or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	1	1,905	1,200	0.63
1879	2	2,475	1,115	0.51
1880				
1881				
1882				

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878*			
1879	3,490	1,264	0 36
1880			
1881			
1882			

*No premium awarded in 1878.

GRADES OR CROSSES.

Steer 4 years or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	12	1,815	2,491	1 37
1879	17	1,928	2,373	1.25

1878—11 Grade Shorthorns; 1 Grade Hereford.
1879—15 Grade Shorthorns; 1 Grade Herefords; 1 Grade Devon.

First Premium Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	2,058	2,480	1.20
1879	Grade Hereford	1,780	2,134	1.19

Grades or Crosses—Steer 3 and under 4 years

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	10	1,296	2,032	1 56
1879	29	1,262	1,946	1 18
1880	18	1,267	1,924	1 54
1881	34	1,259	1,943	1 54
1882	24	1,261	2,034	1 61

1878—9 Grade Shorthorns; 1 Grade Hereford.
1879—20 Grade Shorthorns; 7 Grade Herefords, 2 Grade Devons.
1880—16 Grade Shorthorns; 2 Grade Herefords.
1881—29 Grade Shorthorns; 5 Grade Herefords.
1882—17 Grade Shorthorns; 7 Grade Herefords.

First Premium Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth:
1878	Grade Shorthorn	1,328	2,185	1.65
1879	Grade Shorthorn	1,294	1,986	1.53
1880	Grade Shorthorn	1,411	2,030	1.44
1881	Grade Hereford	1,190	2,145	1 80
1882	Grade Shorthorn	1,174	1,945	1.65

Grades or Crosses—Steer 2 and under 3 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	13	935	1,651	1.78
1879	31	954	1,710	1.77
1880	20	904	1,721	1.89
1881	33	955	1,625	1.70
1882	19	951	1,753	1.85

1878—11 Grade Shorthorns; 2 Grade Herefords.
1879—31 Grade Shorthorns.
1880—16 Grade Shorthorns; 4 Grade Herefords.
1881—28 Grade Shorthorns; 4 Grade Herefords; 1 Hereford and Shorthorn.
1882—12 Grade Shorthorns; 6 Grade Herefords.

First Premium Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	962	1,885	1.96
1879	Grade Shorthorn	932	1,532	1.64
1880	Grade Shorthorn	940	1,900	2.02
1881	Grade Shorthorn	1,045	1,765	1.68
1882	Grade Shorthorn	1,011	1,850	1.83

Grades or Crosses—Steer 1 and under 2 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	2	678	1,470	2.16
1879	14	538	1,307	2.42
1880	22	590	1,290	2 20
1881	5	665	1,288	1.93
1882	17	600	1,318	2.20

1878—2 Grade Shorthorns.
1879—14 Grade Shorthorns,
1880—18 Grade Shorthorns; 3 Grade Herefords; 1 Grade Devon.
1881—3 Grade Shorthorns; 2 Grade Herefords.
1882—7 Grade Shorthorns; 10 Grade Herefords.

First Premium Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	656	1,420	2.15
1879	Grade Shorthorn	605	1,196	1.97
1880	Grade Shorthorn	671	1,395	2.07
1881	Grade Shorthorn	719	1,565	2.17
1882	Grade Shorthorn	715	1,600	2.23

Grades or Crosses—Cow 3 years old or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878				
1879				
1880	1	4,225	1,770	0.41
1881	2	1,663	1,722	1.06
1882	3	1,773	1,896	1.07

1880—1 Grade Shorthorn
1881—1 Grade Shorthorn; 1 Grade Hereford.
1882—3 Grade Shorthorns.

First Premium Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878				
1879				
1880	Grade Shorthorn	4,225	1,770	0.41
1881	Grade Shorthorn	1,268	1,520	1 19
1882	Grade Shorthorn	1,644	1,880	1.14

SWEEPSTAKES.

OPEN TO ALL.

Steer 4 years old or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	14	1,896	2,405	1.28
1879	19	1,782	2,330	1.31

1878—2 Shorthorns; 9 Grade Shorthorns; 1 Hereford; 1 Grade Hereford; 1 Devon.
1879—5 Shorthorns; 11 Grade Shorthorns; 2 Herefords; 1 Grade Hereford.

Sweepstakes Animals.

Year.	Entries.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Shorthorn	1,902	2,440	1.28
1879	Grade Shorthorn	1,573	2,118	1.34

Sweepstakes (open to all) Steer 3 and under 4 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	8	1,229	2,031	1.55
1879	19	1,281	1,965	1.51
1880	18	1,269	1,885	1.49
1881	25	1,263	1,961	1.55
1882	20	1,278	2,030	1.59

1878—7 Grade Shorthorns; 1 Grade Hereford.

1879—2 Shorthorns; 10 Grade Shorthorns; 2 Herefords; 3 Grade Herefords; 2 Grade Devons.

1880—4 Shorthorns; 8 Grade Shorthorns; 1 Hereford; 3 Grade Herefords; 2 Devons.

1881—19 Grade Shorthorns; 2 Herefords; 4 Grade Herefords.

1882—4 Shorthorns; 10 Grade Shorthorns; 6 Grade Herefords.

Sweepstakes Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	1,328	2,185	1.65
1879	Shorthorn	1,335	2,060	1.54
1880	Grade Hereford	1,310	1,875	1.43
1881	Grade Shorthorn	1,237	2,095	1.69
1882	Grade Shorthorn	1,174	1,945	1.65

Sweepstakes (open to all) Steer 2 and under 3 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	13	985	1,651	1.73
1879	21	953	1,705	1.78
1880	22	915	1,752	1.91
1881	27	983	1,672	1.70
1882	17	971	1,783	1.84

1878—5 Shorthorns; 6 Grade Shorthorns; 2 Grade Herefords.
1879—3 Shorthorns; 17 Grade Shorthorns; 1 Hereford.
1880—5 Shorthorns; 9 Grade Shorthorns; 3 Herefords; 4 Grade Herefords; 1 Devon.
1881—6 Shorthorns; 15 Grade Shorthorns; 4 Grade Herefords; 1 Hereford and Shorthorn; 1 Devon.
1882—9 Grade Shorthorns; 2 Herefords; 6 Grade Herefords.

Sweepstakes Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	962	1,625	1.69
1879	Grade Shorthorn	932	1,532	1.64
1880	Grade Hereford	832	1,845	2 21
1881	Grade Shorthorn	880	1,500	1 70
1882	Hereford	1,077	1,940	1.80

Sweepstakes (open to all) Steer 1 and under 2 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	5	674	1,419	2 10
1879	14	572	1,276	2 25
1880	15	647	1,376	2.13
1881	6	656	1,212	1.84
1882	13	596	1,355	2.30

1878—3 Shorthorns; 2 Grade Shorthorns.
1879—4 Shorthorns; 7 Grade Shorthorns; 2 Herefords; 1 Grade Hereford.
1880—1 Shorthorn; 9 Grade Shorthorns; 1 Hereford; 1 Grade Hereford; 1 Grade Devon; 2 Shorthorn and Hereford.
1881—3 Grade Shorthorns; 2 Grade Herefords; 1 Devon.
1882—3 Shorthorns; 5 Grade Shorthorns; 1 Hereford; 4 Grade Herefords

Sweepstakes Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Shorthorn	650	1,480	2 28
1879	Grade Shorthorn	544	1,300	2.39
1880	Grade Hereford	696	1,580	2 27
1881	Grade Shorthorn	719	1,565	2 17
1882	Grade Shorthorn	715	1,600	2.23

Sweepstakes (open to all) Cow 3 years old or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	6	2,282	1,720	0.85
1879	10	2,442	1,728	0 77
1880	5	2,944	1,669	0 68
1881	8	1,891	1,659	0 89
1882	9	2,051	1,816	0.96

1878—4 Shorthorns; 2 Herefords.
1879—8 Shorthorns; 1 Hereford; 1 Devon.
1880—3 Shorthorns; 1 Grade Shorthorn; 1 Hereford.
1881—3 Shorthorns; 1 Grade Shorthorn; 3 Herefords; 1 Grade Hereford.
1882—6 Shorthorns; 2 Grade Shorthorns; 1 Hereford.

Sweepstakes Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Hereford	1,677	1,595	0 95
1879	Shorthorn	2,035	1,769	0 86
1880	Shorthorn	2,136	1,710	0 80
1881	Shorthorn	1,873	1,875	1 00
1882	Shorthorn	1,404	1,865	1 32

GRAND SWEEPSTAKES.

Year.	Breed.	Age in days.	Weight.	__ge gain por day in lbs. since birth.
1878	Grade Shorthorn	1,328	2,185	1.65
1879	Grade Shorthorn	1,335	2,060	1.54
1880	Grade Shorthorn	1,701	2,465	1.44
1881	Grade Shorthorn	1,257	2,095	1 69
1882	Grade Shorthorn	1.613	2,565	1 59

Car-loads, 4 years old or over.

Year.	No. Steers.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	10	1,534	2,245	1.48
1879	6	2,155	2,399	1.13
1879	6	1,599	2,147	1.34
Average		1,764	2,264	1.32

1878—First car, 6 Shorthorns and 4 Grade Shorthorns.
1879—Second car, 2 Shorthorns and 4 Grade Shorthorns.
1879—Third car, 6 Grade Shorthorns.

First Premium Car-Loads.

Year.	No. Steers.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878.	10	1,539	2,245	1.48
1879.	6	1,599	2,147	1.34

Car-loads, 3 and under 4 years.

Year.	No. Steers.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	10	1,394	2,047	1.48
1879	8	1,247	2,017	1.55
1879	8	1,261	2,030	1.59
1879	8	1,280	1,868	1.45
1880	8	1,285	1,922	1.49
1880	8	1,255	1,985	1.56
1881	8	1,267	2,048	1.61
1881	8	1,291	1,957	1.52
1881	8	1,290	1,985	1.54
1881	8	1,266	1,925	1.52
1882	8	1,304	2,026	1.56
1882	8	1,271	2,101	1.65
1882	8	1,254	2,163	1.72
1882	8	1,338	1,760	1.31
Average	8	1,285	1,988	1.53

No. 1, 10 Grade Shorthorns; No. 2, 8 Grade Shorthorns; No 3, 8 Grade Shorthorns; No. 4, 1 Hereford, 7 Grade Herefords; No. 5, 8 Grade Shorthorns; No. 6, 8 Grade Shorthorns; No. 7, 8 Grade Shorthorns; No. 8, 8 Grade Shorthorns; No. 9, 5 Shorthorns, 3 Grade Shorthorns; No. 10, 8 Grade Shorthorns; No. 11, 8 Grade Shorthorns; No. 12, 8 Grade Shorthorns; No. 13, 8 Grade Shorthorns; No. 14, 8 Grade Herefords.

First premium Car-Loads.

Year.	No. Steers.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878.	10	1,394	2,047	1.48
1879.	8	1,247	2,017	1.55
1880.	8	1,255	1,985	1.56
1881.	8	1,267	2,048	1.61
1882.	8	1,271	2,101	1.65

Car-loads, 2 and under 3 years.

Car	Year.	No. Steers.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1	1878	10	1,025	1,667	1.63
2	1878	10	1,102	1,759	1.60
3	1879	10	965	1,818	1.87
4	1879	10	918	1,695	1.77
5	1879	10	945	1,648	1.74
6	1880	10	925	1,705	1.84
7	1881	10	905	1,726	1.91
8	1881	10	934	1,475	1.58
9	1882	10	1,013	1,864	1.84
10	1882	10	982	1,826	1.96
11	1882	10	977	1,551	1.59
	Average	10	967	1,703	1.75

No. 1, 10 Grade Shorthorns; No. 2, 10 Grade Shorthorns; No. 3, 10 Grade Shorthorns; No. 4, 10 Grade Shorthorns; No. 5, 1 Shorthorn and 9 Grade Shorthorns; No. 6, 10 Grade Shorthorns; No. 7, 10 Grade Shorthorns; No. 8, 2 Shorthorns and 8 Grade Shorthorns; No. 9, 10 Grade Shorthorns; No. 10, 10 Grade Shorthorns; No. 11, 10 Grade Herefords.

First Premium Car-loads.

Year.	No. Steers.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878.	10	1,025	1,667	1.63
1879.	10	965	1,818	1.87
1880.	10	925	1,705	1.84
1881.	10	905	1,726	1.91
1882.	10	1,013	1,864	1.84

Car-loads, 1 and under 2 years.

Year.	No. Steers.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878				
1879	12	541	1,313	2 42
1880	13	549	1,187	2.20
1881				
1882	12	526	1,158	2 20
Average	12	539	1,219	2.27

1879—12 head Grade Shorthorn steers. 1880—12 head Grade Shorthorn steers.
1882– 12 head Grade Shorthorn steers.

Heaviest Fat Steer.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	2,162	3,155	1 45
1879	Grade Shorthorn	2,403	2,840	1.18
1880	Grade Shorthorn	2,705	3,130	1.13
1881	Grade Shorthorn	1,633	2,435	1 49
1882	Grade Shorthorn	2,769	3,050	1 10

EARLY MATURITY.

STEERS SHOWING MOST RAPID GROWTH.

Steers 4 years old or over.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	1,663	2,605	1.56
1879	Grade Shorthorn	1,613	2,820	1.74

Steer 3 and under 4 years.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	1,298	2,305	1.70
1879	Grade Shorthorn	1,269	2,307	1.81
1880	Grade Shorthorn	1,250	2,215	1.77
1881	Grade Shorthorn	1,176	2,130	1 81
1882	Shorthorn	1,305	2,535	1 94

1880—9 Grade Shorthorns—1 Devon.
1881—1 Shorthorn—7 Grade Shorthorns—2 Grade Herefords.
1882 2 Shorthorns—4 Grade Shorthorns—3 Grade Herefords.

Steer 2 and under 3 years.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Shorthorn	783	1,585	2 02
1879	Grade Shorthorn	977	2,081	2 12
1880	Grade Hereford	832	1,845	2 21
1881	Grade Shorthorn	872	1,935	2 21
1882	Grade Shorthorn	858	2,220	2 59

1880—3 Shorthorns—5 Grade Shorthorns—2 Grade Herefords.
1881—9 Grade Shorthorns—1 Grade Hereford.
1882—3 Grade Shorthorns—2 Herefords—3 Grade Herefords.

Steer 1 and under 2 years.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Shorthorn	650	1,480	2 28
1879	Grade Shorthorn	513	1,373	2.67
1880	Grade Shorthorn	585	1,450	2 47
1881	Grade Shorthorn	719	1,565	2 17
1882	Shorthorn	384	1,140	2 97

1880—1 Shorthorn—7 Grade Shorthorns—1 Grade Hereford—1 Hereford Shorthorn.
1881—3 Devons—3 Grade Shorthorns—2 Grade Herefords.
1882—2 Shorthorns—7 Grade Shorthorns—3 Grade Herefords.

COST OF PRODUCTION.

Steer or Spayed Heifer 1 to 12 months old.

Year	Breed.	Number animals.	Average cost production per head 1 to 12 mos.	Average weight at 12 mos.	Average value per head at 12 mos. at $6 per 100 lbs.	Net profit per head at 12 mos.	Average cost production per lb. 1 to 12 mos.
1882	Shorthorn	3	$51 43	1030	$61 80	$10 37	$5 03
1882.	Grade Shorthorn	3	31 96	983	59 00	28 04	3 24
1882.	Grade Hereford.	3	28 19	737	44 20	16 01	3 82

COST OF PRODUCTION.

Steer or Spayed Heifer 1 to 24 months old.

Year	Breed.	Number animals.	Average cost production per head 1 to 21 mos.	Average weight at 24 mos.	Average value per head at 24 mos. at $6 per 100 lbs.	Net profit per head at 24 mos.	Average cost production per lb. 1 to 24 mos.
1882.	Shorthorn....	1	$86 80	1600	$96 00	$9 20	$5 42
1882.	Grade Shorthorn.	3	79 23	1530	91 80	12 57	5 17
1882.	Grade Hereford...	1	61 61	1370	82 20	20 59	4 42

COST OF PRODUCTION.

Steer or Spayed Heifer 1 to 36 months old.

Year	Breed.	Number animals.	Average cost production per head 1 to 36 mos.	Average weight at 36 mos	Average value per head at 36 mos. at $6 per 100 lbs.	*Net loss per head at 36 mos.	Average cost production per lb. at 36 mos.
1882.	Shorthorn.	1	$167 29	2250	$135 00	$32 29	$7 43
1882	Grade Shorthorn..	1	167 29	2250	135 00	32 29	7 43

*Steers of extra quality such as these statistics represent, frequently sell for more than the estimated price, $6 per 100 pounds, live weight.

COST OF PRODUCTION.

The following exhibit includes the averages of nine animals 1 to 12 months old, five animals 12 to 24 months old, and two animals 24 to 36 months old, exhibited in 1882:

	Nine animals 1 to 12 mos.	Five animals 12 to 24 mos.	Two animals 24 to 36 mos.
Average value of animal at birth, $5 00	....	....	....
" " milk consumed, $15 86....	....	....	....
" " grain consumed each year	$13 63	$29 33	$48 00
" " hay and forage consumed each ye'r	2 46	8 06	16 00
" " pasture consumed each year......	1 75	2 46	6 50
" " other food consumed each year ..	....	....	6 00
" annual expense for care.......	5 00	5 00	5 00
" gain per year in pounds....	9 17	5 62	6 50
" cost of production per 100 lbs. on each year's gain.	4 03	7 98	12 54
Average weight at close of each year................	9 17	15 12	22 50
" yearly cost feed and care.......	39 19	44 85	81 50
" value at close each year at $6 00 per 100 lbs.	55 00	90 72	135 00
" net profit or loss at close of each year.......	15 18	6 68	*30 54

*Loss.

COMPARISON FIRST PRIZE ANIMALS OF THE SEVERAL BREEDS OF CATTLE—EXHIBITED IN 1882.

Steers 3 and under 4 years.

Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
Shorthorn	1,305	2,535	1.94
Hereford	1,121	1,765	1 57
Grades or crosses	1,174	1,945	1.65

Steers 2 and under 3 years.

Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
Shorthorn	....	....	....
Hereford	1,077	1,940	1.80
Grades or crosses	1,011	1,850	1.83

Steers 1 and under 2 years.

Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
Shorthorn	645	1,620	2 51
Hereford	697	1,330	1 90
Grades or crosses	715	1,600	2.23

Cows 3 years old or over.

Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
Shorthorn	1,404	1,865	1 32
Hereford	3,943	1,800	0.45
Grades or crosses	1,644	1,880	1.14

DRESSED CARCASS.

Steers 3 and under 4 years.

	Name of Animal	Breed.	Age in days	Average gain per day since birth	Weight at home	Live weight at slaughter	Weight dressed, carcass or four quarters	Per cent. net carcass or quarters to gross weight	Weight, carcass, hide and tallow	Per ct. profitable wt. of carcass, hide and tallow to gr. or l. wt	Weight, tallow	Weight, hide	Weight, left fore-quarter	Weight, right fore-quarter	Weight, left hind-quarter	Weight, right hind-quarter
	Broad Horns	Grade Hereford	1,248	1 30	1,640	1,580	988	.63	1,211½	.76	128½	95	269	255	222	242
	Pythias	Grade Hereford.	1,378	1 35	1,850	1,800	1,183	.66	1,410½	.78	118½	109	220	317	277	269
	Captain Jack	Grade Shorthorn	1,208	1 56	1,930	1,855	1,280	.69	1,525	.82	149	96	354	349	290	287
	Solomon	Grade Hereford.	1,285	1 55	2,020	1,955	1,293	.66	1,602	.82	207	102	357	355	289	292
	Sir Richard	Hereford.	1,121	1 57	1,775	1,690	1,149	68	1,375	.81	118½	107½	295	290	277	287
1882..	Average, 5 animals		1,248	1 46	1.843	1,776	1,178	66	1,425	.80	144	102	319	313	271	275
1881..	" 3 "		1,284	1 44	1,922	1,846	1,233	67	1,420	.77	92	95	337	338	285	272
1880.	" 3 "		1 256	1.41	1,790	1,725	1,181	68	1,453	.84	171	100	314	307	275	285
1879..	" 3 "		1,267	1 42	......	1,790	1,183	.66	1,456	.81	177	97	318	310	282	272

First Premium Animals.

	Name of Animal	Breed.	Age in days	Average gain per day since birth	Weight at home	Live weight at slaughter	Weight dressed, carcass or four quarters	Per cent. net carcass or quarters to gross weight	Weight, carcass, hide and tallow	Per ct. profitable wt. of carcass, hide and tallow to gr. or l. wt	Weight, tallow	Weight, hide	Weight, left fore-quarter	Weight, right fore-quarter	Weight, left hind-quarter	Weight, right hind-quarter
1882..	Sir Richard	Hereford	1,121	1 57	1,775	1,690	1,149	68	1,375	81	118½	107½	295	290	277	287
1881..	Broad Horns	Grade Hereford	1,291	1.42	1,900	1,830	1,227	67	1,399	.76	68	103	345	340	277	265
1880..	Alex	Hereford	1,183	1.58	1,910	1,850	1,250	.67	1,545	.83	184	111	327	318	295	310
1879..	Barney	Grade Hereford	1,274	1 56	......	1,963	1,317	.67	1,618	.82	195	106	371	354	305	287

Dressed Carcass Continued

Age 3 and under 4—*Continued.*

	Name of Animal.	Breed.	Weight head	Weight feet	Weight paunch	Weight guts	Weight liver	Weight heart	Weight tongue	Weight lungs	Hide trimmings	Weight of blood	Loss of weight by shrinkage	Weight of unprofitable parts	Per cent. unprofitable weight to gross or live weight
	Broad Horns	Grade Hereford	41½	19½	106	47	11	6½	5	6½	......	48	77½	368½	.24
	Pythias	Grade Hereford	37	17½	117	41	14	5	6	8	......	47	97	389½	.22
	Captain Jack	Grade Shorthorn	43	22	95	25	13	6	7	14½	......	57	47½	330	.18
	Solomon	Grade Hereford	43	19½	100	24	13	6	6½	10	......	53	18	363	.18
	Sir Richard	Hereford	39	20	131	25	13½	5	6	8½	......	44	23	315	.19
1882..	Average, 5 steers		40	19	122	32	13	6	6	9	......	50	52	351	20
1881..	" 3 "		34	21	149	56	17	6½	11½	22	11	41	56	......	23
1880..	" 3 "		30½	18	......	......	......	......	....	......	.....	......	......	......	......
1879..	" 3 "		50	......	......	......	......	......	......	......	......	......	......	......	......

First Premium Animals.

	Name of Animal.	Breed.	Weight head	Weight feet	Weight paunch	Weight guts	Weight liver	Weight heart	Weight tongue	Weight lungs	Hide trimmings	Weight of blood	Loss of weight by shrinkage	Weight of unprofitable parts	Per cent. unprofitable weight to gross or live weight
1882..	Sir Richard	Hereford	39	20	131	25	13½	5	6	8½	......	44	23	315	.19
1881..	Broad Horns	Grade Hereford	36½	19	138	55½	15	6½	13	24½	10	41	72	......	.23
1880..	Alex	Grade Hereford	32½	18½	......	......	......	......	......	......	.....	......	......	......	......
1879..	Barney	Hereford	55	19	......	....	......	......	.....	......	......	......	......	......	......

Age 2 and under 3 years.

	Name of Steer.	Breed.	Age in days	Average gain per day since birth	Weight at home	Live wt. at slaughter.	Weight dressed carcass or four quarters.	Per ct. net carcass or quarters to gross weight	Weight carcass, hide and tallow	Per ct. profitable wt. (carcass, hide and tallow,) to gr. or live wt.	Weight tallow	Weight hide	Weight left fore quarter	Weight right fore quarter	Weight left hind quarter	Weight right hind quarter
	Beecher	Grade Hereford	966	1.88	1,820	1,790	1,165	65	1,415	.79	135	115	307	309	277	272
	Jay	" "	972	1.78	1,778	1,735	1,115	64	1,321½	.76	101½	105	294	285	272	264
	Curly Coat	" "	1,061	1 38	1,500	1,440	930	64	1,141½	.72	125	96½	244	240	222	224
1882	Average, 3 steers		999	1 68	1,699	1,655	1,070	64	1,292	.75	120	102	231	278	257	253
1881	" 2 "		......	......	1,595	1,567	1,035	66	1,228	.78	103	90	273	263	248	243
1880	" 2 "		......	......	1,606	1,534	1,012	.66	1,255	.81	152	90	266	263	242	241

First Premium Animals.

1882	Jay	Grade Hereford	972	1 78	1,778	1,735	1,115	.64	1,321¼	.76	101½	105	294	285	272	264
1881	Echerd	Grade Shorthorn	......	......	1,516	1,460	977	.66	1,145	.78	81	87	267	242	232	235
1880	Blank	" "	......	......	1,560	1,461	974	.66	1,209	82	145	90	260	253	227	233

Dressed Carcass—Continued.

Age, 2 and under 3 years.

	Name of Animal.	Breed.	Weight of head	Weight of feet	Weight of paunch	Weight of guts	Weight of liver	Weight of heart	Weight of tongue	Weight of lungs	Hide trimmings	Weight of blood	Loss of weight by shrinkage	Weight of unprofit'ble parts	Per cent. unprofitable weight to gross or live weight.
	Beecher	Grade Hereford.	44	23	136	48	9	7	8	11	......	49	40	375	.21
	Jay	" "	43	23	148	48	15	5½	6	11	......	39	75	413½	.24
	Curly Coat	" "	33½	16	110	35	10	5	5	6½	......	33	44½	298½	.28
1882	Average, 3 animals		40	20	131	43	11	6	6	9	......	40	53	362	.24
1881	" 2 "		35	18	111	46	12	5	9	17	11	44	28	......	21
1880	" 2 "		28	18	......	......	......	......	......	......	......	......	......	......	......

First Premium Animal.

	Name of Animal.	Breed.	Weight of head	Weight of feet	Weight of paunch	Weight of guts	Weight of liver	Weight of heart	Weight of tongue	Weight of lungs	Hide trimmings	Weight of blood	Loss of weight by shrinkage	Weight of unprofit'ble parts	Per cent. unprofitable weight to gross or live weight.
1882	Jay	Grade Hereford	43	23	148	48	15	5½	6	11	......	39	75	413½	.24
1881	Echerd	Grade Shorthorn	37	18	94½	40½	12½	5	......	......	......	......	......	......	.17
1880	Blank	" "	28	20	......	......	......	......	......	......	......	......	......	......	......

Age 1 and under 2 years.

Name of Animal.	Breed.	Age in days	Average gain per day since birth	Weight at home	Live weight at slaught'r	Weight dressed carcass or four quarters	Per cent. net carcass or quarters to gr. weight.	Weight carcass, hide and tallow	Per cent. of profitable weight of carcass, hide and tallow to gross or live weight	Weight tallow	Weigh hide	Weight left fore quarter	Weight right fore quarter	Weight left hind quarter	Weight right hind quarter
Experiment	Grade Hereford	475	2 16	1,020	1,000	616	61	745	.74	54	75	155	153	155	153
The Deacon	Grade Shorthorn	615	1 74	1,140	1,040	663	63	806½	77	70	73½	170	170	165	158
Red Major	Grade Shorthorn	715	2.23	1,585	1,540	1,028	66	1,221	79	97	96	259	257	257	255
1882.. Average of 3 animals		601	2 04	1,248	1,193	769	.63	924	.77	73	81	194	193	192	188
1881.. Average of 1 animal		622	2 05	1,280	1,197	730	60	883	73	70	83	195	185	175	175
1880.. Average of 1 animal		643	1.93	1,265	1,217	816	.67	1,021	.83	121	84	206	203	203	203

First Premium Animals.

Name of Animal.	Breed.	Age in days	Average gain per day since birth	Weight at home	Live weight at slaught'r	Weight dressed carcass or four quarters	Per cent. net carcass or quarters to gr. weight.	Weight carcass, hide and tallow	Per cent. of profitable weight of carcass, hide and tallow to gross or live weight	Weight tallow	Weigh hide	Weight left fore quarter	Weight right fore quarter	Weight left hind quarter	Weight right hind quarter
1882.. Red Major	Grade Shorthorn	715	2 23	1,585	1,540	1,028	.66	1,221	79	97	96	259	257	257	255
1881. Bailey	Grade Hereford	622	2 05	1,280	1,197	730	.60	883	.73	70	83	195	185	175	175
1880. Monroe	Heref d and Shorth'n	643	1 93	1,265	1,217	816	.67	1,021	.83	121	84	206	203	203	203

Dressed Carcass—Continued.

Age 1 and under 2 years—*Continued*

Name of Animal.	Breed.	Weight head	Weight feet	Weight paunch	Weight guts	Weight liver	Weight heart	Weight tongue	Weight lungs	Hide trimmings	Weight blood	Loss of weight by shrinkage	Weight of unprofitable parts	Per cent. unprofitable weight to gross or live weight
Experiment	Grade Hereford	25	11½	102	26	12	3	4	7	......	21	43½	255	.26
The Deacon	Grade Shorthorn	28	16	69	31	11	4	5	9	......	28	32½	233½	.23
Red Major	Grade Shorthorn	31	20	106	35	12	4	6	12	......	52	41	319	21
1882.. Average of 3 animals		28	15	92	30	11	4	5	9	......	33	39	269	.23
1881.. Average of 1 animal		38	15½	87	37	13	5	8½	17	17	51½	25	......	.26
1880.. Average of 1 animal		23	15	......	......	......	......	......	......	......	......	......	......	......

First Premium Animals.

Name of Animal.	Breed.	Weight head	Weight feet	Weight paunch	Weight guts	Weight liver	Weight heart	Weight tongue	Weight lungs	Hide trimmings	Weight blood	Loss of weight by shrinkage	Weight of unprofitable parts	Per cent. unprofitable weight to gross or live weight
1882.. Red Major	Grade Shorthorn	31	20	106	35	12	4	6	12	......	52	41	319	.21
1881.. Bailey	Grade Hereford	38	15½	87	37	13	5	8½	17	17	51½	25	......	.26
1880.. Monroe	Hereford and Shorthorn	23	15	......	......	......	......	......	......	......	......	......	......	......

Average weights of the rings of the various breeds of Cattle and their crosses, exhibited at the 1878, 1879, 1880, 1881 and 1882 Fat Stock Shows:

Breeds.	Steer 4 years old or over...	Steer 3 years old and under 4 years... ...	Steer 2 years old and under 3 years... ...	Steer 1 year old and under 2 years......	Cow 3 years old or over ..
Shorthorn, 1878	2,262	2,087	1,621	1,385	1,723
Shorthorn, 1879	2,358	2,039	1,624	1,267	1,786
Shorthorn, 1880	....	2,172	1,801	1,590	1,618
Shorthorn, 1881	....	2,093	1,634	....	1,756
Shorthorn, 1882	....	2,141	....	1,288	1,808
Average	2,310	2,106	1,670	1,382	1,739
Hereford, 1878	2,010	1,735	1,470	....	1,630
Hereford, 1879	1,994	1,973	1,474	1,230	1,615
Hereford, 1880	....	1,875	1,738	1,115	1,720
Hereford, 1881	....	1,947	....	....	1,455
Hereford, 1882	....	1,765	1,626	1,330	1,672
Average	2,002	1,859	1,577	1,225	1,618
Devon, 1878	1,757	1,565	....	....	1,200
Devon, 1879	....	1,509	....	844	1,115
Devon, 1880	....	1,220	1,250	....	....
Devon, 1881	....	1,152	977	792	....
Devon, 1882	....	....	....	....	....
Average	1,757	1,361	1,113	818	1,157
Grades or Crosses, 1878	2,491	2,032	1,650	1,470	....
Grades or Crosses, 1879	2,373	1,946	1,710	1,307	....
Grades or Crosses, 1880	....	1,924	1,.21	1,290	1,770
Grades or Crosses, 1881	....	1,943	1,675	1,288	1,722
Grades or Crosses, 1882	....	2,034	1,753	1,318	1,896
Average	2,432	1,976	1,702	1,335	1,796

Consolidated average weights of the rings of the various breeds of Cattle and their crosses, exhibited in 1878, 1879, 1880, 1881 and 1882:

Shorthorn	2,310	2,106	1,670	1,382	1,739
Hereford	2,002	1,859	1,577	1,225	1,618
Devon	1,757	1,361	1,113	818	1,157
Grades or Crosses	2,432	1,976	1,702	1,335	1,796

EARLY MATURITY.

From the foregoing table, giving the consolidated average weights of all the cattle of the several breeds of different ages exhibited at the Fat Stock Shows of 1878, 1879, 1880, 1881 and 1882, the following table is prepared.

It is generally conceded that the best obtainable specimens of the several beef breeds have been exhibited at these shows, and until the results are changed at future shows, the public may find the following table of some value in determining the comparative feeding qualities as far as early maturity is concerned.

In the following table it will be seen that the Shorthorns have made the most rapid growth, and the weights of this breed, as given above, will be represented by one hundred as a basis for determining by percentage the comparative weights of the different breeds of cattle of same ages exhibited at the five exhibitions of fat stock:

Breed.	Steer 3 years old and under 4 years........	Steer 2 years old and under 3 years........	Steer 1 year old and under 2 years........	Cow 3 years old or over...
Shorthorn	100	100	100	100
Hereford	85	99	86	94
Devon	62	67	57	66
Grades or Crosses	89	100×	98	100×

QUALITY.

The block is generally conceded to be the most conclusive test of the quality of meat.

The premiums awarded beef carcasses at fat stock shows to date are given in the following table.

The number of entries in the class and sweepstakes rings for dressed carcasses at the several shows are as follows: Herefords, 8; Grade Herefords, 28; Hereford Shorthorn, 2; Grade Shorthorn, 15; Grade Devon, 1; making the per cent. of entries as follows: Herefords, seven per cent.; Grade Herefords, fifty-two per cent.; Hereford Shorthorn, five per cent.; Grade Shorthorn, thirty-four per cent.; Grade Devon, two per cent.

In the table, each premium awarded dressed carcasses at the several shows in the class and sweepstakes rings is counted at 100 points for the convenience of making comparison:

Year.	Hereford		Grade Hereford.		Shorthorn.		Grade Shorthorn.	
	Per cent. of total entries.	Points scaled..	Per cent. of total entries	Points scaled..	Per cent. of total entries.	Points scaled .	Per cent. of total entries	Points scaled
Steer 3 and under 4 years.								
1882	20	100	60	......	......	......	20	......
1881	......	......	33⅓	100	......	......	66⅔	......
1880	33⅓	100	33⅓	......	......	......	33⅓	......
*1879	......	......	33⅓	100	......	......	33⅓	......
Steers 2 and under 3 years.								
1882	......	......	100	100	......	......	......	......
1881	......	......	50	......	......	......	50	100
1880	......	......	50	......	......	......	50	100
Steers 1 and under 2 years.								
1882	......	......	33⅓	......	......	......	66⅔	100
1881	......	......	100	100	......	......	......	......
1880	50	50	......	......	50	50	......	......
Sweepstakes—all ages.								
1882	9.09	100	63.64	......	......	......	27.27	......
1881	7.15	......	42.85	100	7.15	......	42.85	......
Total	......	350	......	500	......	50	......	300

*33⅓ per cent. grade Devon.

It will be seen that the honors in the slaughtering rings have been distributed among the various breeds of cattle, their grades or crosses, as follows: The Herefords receive 29 per cent. of all the prizes for dressed carcasses, grade Herefords 42 per cent., Hereford Shorthorn 4 per cent., grade Shorthorn 25 per cent.

The entries in the killing classes at the several shows are as follows: Steers 3 and under 4 years—In 1882, Hereford 1, grade Hereford 3, grade Shorthorn 1; in 1881, grade Hereford 1, grade Shorthorns 2; in 1880, Hereford 1, grade Hereford 1, grade Shorthorn 1; in 1879, grade Hereford 1, grade Devon 1, grade Shorthorn 1.

The premiums have been awarded on carcasses of steers 3 and under 4 years as follows: In 1882, Hereford steer Sir Richard, exhibited by M. H. Cochrane, Compton, Quebec, Can.; in 1881, grade Hereford steer Broad Horns, exhibited by C. M. Culbertson, of Chicago; in 1880, Hereford steer Alex, exhibited by T. L. Miller, Beecher, Ill.; in 1879 grade Hereford steer Barney, exhibited by T. L. Miller, of Beecher, Ill.

The entries in the killing classes for steers 2 and under 3 years have been as follows: In 1882, grade Herefords 3; in 1881, grade Herefords 1, grade Shorthorn 1; in 1880, grade Hereford 1, grade Shorthorn 1.

Premiums have been awarded carcasses of steers 2 and under 3 years of age, as follows: In 1882, grade Hereford steer Jay, exhibited by H. Norris & Son, Aurora, Ill; in 1881, grade Shorthorn steer Echerd, exhibited by David Grant, Petersburg, Ill.; in 1880, grade Shorthorn steer Blank, exhibited by J. D. Gillett, Elkhart, Ill.

The following entries of steers 1 and under 2 years were made for the premiums offered for dressed carcass: In 1882, grade Shorthorns 2, grade Hereford 1; in 1881, grade Hereford 1; in 1880, Hereford Shorthorn 1.

Premiums have been awarded carcasses of steers 1 and under 2 years, as follows: In 1882, grade Shorthorn steer Red Major, exhibited by J. H. Potts & Son, Jacksonville, Ill.; in 1881, grade Hereford steer Bailey, exhibited by G. S. Burleigh, Mechanicsville, Iowa; in 1880, Hereford and Shorthorn steer Monroe, exhibited by G. S. Burleigh, Mechanicsville, Iowa.

Entries have been made in sweepstakes rings for dressed carcasses, as follows: In 1882, Herefords 1, grade Herefords 7, grade Shorthorn 3; in 1881, grade Hereford 3, grade Shorthorn 3, Hereford Shorthorn 1.

Sweepstakes premiums have been awarded dressed carcasses, as follows: In 1882, Hereford steer Sir Richard, exhibited by M. H. Cochrane, Compton, Quebec, Can.; in 1881, grade Hereford steer Broad Horns, exhibited by C. M. Culbertson, Chicago.

PRIZE RECORD.

The number of entries and number of prizes awarded cattle of the several breeds and their crosses or grades at the Fat Stock Shows, in rings where all breeds and their grades or crosses compete together, is given in the following tables:

The number of entries of the several classes of cattle is as follows: Shorthorns 78, Herefords 28, Devons 9, grade Shorthorns 455, grade Herefords 140, grade Devons 6.

The per cent. of foregoing entries to the total number (716) is as follows: Shorthorns, 11 per cent.; Herefords, 4 per cent.; Devons, 1 per cent.; grade Shorthorns, 63 per cent.; grade Herefords, 20 per cent.; grade Devons, 1 per cent.

The number of first and sweepstakes premiums awarded to the several breeds, their grades or crosses, in the rings specified in the table, are: Shorthorns 14, Herefords 6, grade Shorthorns 46, grade Herefords 11.

The per cent. of premiums awarded each class of cattle at the several shows, based on the foregoing figures, is as follows: Shorthorns 18, Herefords 8, grade Shorthorns 60, grade Herefords 14.

	SHORT-HORNS.		HERE-FORDS.		DEVONS.		GRADE SHORT-HORNS.		GRADE HERE-FORDS.		GRADE DEVON.	
	No. entries...	1st and sweepstakes premiums........	No. entries....	1st and sweepstakes premiums	No. entries....	1st and sweepstakes premiums...	No. entries . .	1st and sweepstakes premiums.......	No. entries . .	1st and sweepstakes premiums.......	No. entries. .	1st and sweepstakes premiums.......
Grades and Crosses												
Steer 3 and under 4.	......	......	......	......	......	.....	91	4	22	1	......	......
" 2 " 3 .	......	......	......	......	......	......	99	5	16	......	......	.....
" 1 " 2	......	......	......	......	.....	......	44	5	15	......	......	......
Cow 3 or over........	......	......	......	......	......	......	5	3	1	......	......	......
Sweepstakes.												
Steer 3 and under 4	10	1	5	......	2	......	54	3	17	1	4	......
* " 2 " 3..	19	......	6	1	2	.....	56	3	16	1	......	......
§ " 1 " 2	11	1	4	.....	1	......	26	3	8	1	1	......
Cow 3 or over........	24	4	8	1	1	......	4	......	1	......	......	...
Grand Sweepstakes.	......	......	......	......	......	......	......	5	......	......	......	......
Early maturity 3 and under 4	3	1	......	1	......	. . ..	20	4	5	......	......	......
Early maturity 2 and under 3	3	1	2	......	......	......	17	3	6	1	......	......
†Early maturity 1 and under 2	3	2	......	......	3	.....	17	3	6	......	......	......
Cost production	5	......	......	......	......	... ..	7	2	4	1	......	......
‡Dressed carcass....	......	......	3	3	......	......	15	3	23	5	1	......
Total..............	78	14	28	6	9	......	455	46	140	11	6	......

* Hereford Shorthorn 1.
§ Hereford Shorthorn 2.
† Hereford Shorthorn 1.
‡ Hereford Shorthorn 2.

If the 77 premiums awarded at the several shows on the 716 entries represented in the above table had been distributed in proportion to the number of entries made, the several classes of cattle would have received the following number of first and sweepstakes premiums: Shorthorns, 8; Herefords, 3; Devons, 1; Grade Shorthorns, 49; Grade Herefords, 15; Grade Devon, 1. These numbers reduced to per cent., show that Shorthorns should have received 10 per cent. of all first and sweepstakes premiums; Herefords 4 per cent.; Devons 1 per cent.; Grade Shorthorns 64 per cent.; Grade Herefords 20 per cent., and Grade Devons 1 per cent.

It will be seen that the Shorthorns were awarded eight per cent. more premiums in proportion to the number of entries made than the average of all the classes of cattle competing; the Herefords four per cent. more, the Grade Shorthorns four per cent. less, and the Grade Herefords six per cent. less, and Grade Devons 1 per cent. less.

The decisions of expert judges, in proportion to the number of entries made, give prestige to the several breeds and their grades as follows: 1st, Shorthorn; 2d, Hereford; 3d, Grade Shorthorn; 4th, Grade Hereford; 5th, Grade Devon; 6th, Devon.

CLASS C—SHEEP.

Average weights in the rings of the various breeds of Sheep and their crosses, exhibited at the 1878, 1879, 1880, 1881 and 1882 Fat Stock Shows:

Breed.	Wether 2 years old or over....	Wether 1 and under 2 years old....	Wether under 1 year old....	Ewe 2 years old or over ..	Ewe 1 and under 2 years	Ewe under 1 year old.....
Cotswold, 1878	......	224	......	306	......	150
Cotswold, 1879	243	194	150	270	228	132
Cotswold, 1880	236	196	114	271	......	......
Cotswold, 1881	251	194	......	244	226	121
Cotswold, 1882	274	213	136	274	253	125
Average	251	204	133	273	235	127
Other Long Wools, 1878	......	......	......	......	......	......
Other Long Wools, 1879	266	......	......	......	......	113
Other Long Wools, 1880	281	......	......	......	......	111
Other Long Wools, 1881	......	......	......	......	......	......
Other Long Wools, 1882	267	255	151	238	204	......
Average	271	255	151	238	204	112
Southdown, 1878	......	......	......	......	......	......
Southdown, 1879	178	160	94	171	128	100
Southdown, 1880	219	166	107	173	132	95
Southdown, 1881	195	157	193	......	......	......
Southdown, 1882	206	194	114	165	......	......
Average	199	169	127	169	130	97
Other Middle Wools, 1878	......	......	......	......	......	......
Other Middle Wools, 1879	213	......	......	213	185	......
Other Middle Wools, 1880	......	184	......	......	199	89
Other Middle Wools, 1881	226	181	......	220	......	......
Other Middle Wools, 1882	230	175	94	202	240	85
Average	223	180	94	211	208	87
American Merino, 1878	......	......	......	......	......	......
American Merino, 1879	......	......	......	......	......	......
American Merino, 1880	139	112	75	99	78	......
American Merino, 1881	......	......	......	......	......	......
American Merino, 1882	......	......	......	104	69	52
Average	139	112	75	101	73	52

Sheep—*Continued.*

Breed.	Wether 2 years old or over.	Wether 1 and under 2 years old........	Wether under 1 year old....	Ewe 2 years old or over.	Ewe 1 and under 2 years..	Ewe under 1 year old.....
Other Fine Wools, 1878	......	......	......	......	......	......
Other Fine Wools, 1879	......	......	......	......	......	......
Other Fine Wools, 1880	......	......	......	......	......	......
Other Fine Wools, 1881	......	......	......	......	......	......
Other Fine Wools, 1882	......	......	......	......	......	......
Average	......	......	......	......	......	......
Grades or Crosses, 1878	......	......	......	......	......	......
Grades or Crosses, 1879	213	177	128	215	160	125
Grades or Crosses, 1880	219	217	118	232	171	118
Grades or Crosses, 1881	231	169	117	164	164	104
Grades or Crosses, 1882	246	196	118	241	167	141
Average	227	189	120	213	165	122

Consolidated average weights of the rings of the various breeds of Sheep and their crosses, exhibited in 1878, 1879, 1880, 1881 and 1882.

Cotswold	251	204	133	273	235	127
Other Long Wools	271	255	151	238	204	112
Southdown	199	169	127	169	130	97
Other Middle Wools	223	180	94	211	208	87
American Merino	139	112	75	101	73	52
Other Fine Wools	......	......	......	......	......	......
Grades or Crosses	227	189	120	213	165	122

EARLY MATURITY.

WETHERS SHOWING MOST RAPID GROWTH.

Wether 2 and under 3 years.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1879	Leicester	969	300	0.31
1880	Leicester	971	282	0.29
1881	Cotswold	933	281	0.30
1882	Cotswold	966	292	0.30

Wether 1 and under 2 years.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Cotswold	535	220	0.41
1879	Cotswold	574	218	0.38
1880	Grade Oxford	612	232	0.38
1881	Cotswold	568	205	0.36
1882	Leicester	600	295	0.49

Wether under 1 year.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878.	Cotswold	170	152	0 89
1879.	Cotswold	240	150	0 62
1880.	Cotswold	210	114	0 54
1881.	Southdown	213	193	0.90
1882.	Leicester	235	178	0.75

CLASS D—SWINE.

Average weights of the rings of the various breeds of hogs and their crosses, exhibited at the 1878, 1879, 1880, 1881 and 1882 Fat Stock Shows :

Breed.	Barrow 2 years old or over ...	Barrow 1 and under 2 years.	Barrow under 1 yr. and over 6 months......	Barrow under 6 months......	Sow 2 yrs. old or over........	Sow 1 and under 2 yrs. old.	Sow under 1 year and over 6 months......	Sow under 6 months.......
Berkshire, 1878	......	......	......	......	......	452	......	......
Berkshire, 1879	......	469	......	190	635	510	351	162
Berkshire, 1880	......	......	......	......	......	446	......	......
Berkshire, 1881	......	428	......	......	......	463	......	......
Berkshire, 1882	......	408	260	......	......	425	372	......
Average	......	433	260	190	635	459	361	162
Poland China, 1878	651	501	379	192	577	......	......	203
Poland China, 1879	745	521	330	193	624	484	339	147
Poland China, 1880	......	490	272	......	......	445	263	......
Poland China, 1881	......	520	......	......	......	557	306	......
Poland China, 1882	......	455	298	......	......	466	326	......
Average	698	497	319	192	600	488	308	175
Chester White, 1878	644	......	......	......	......	......	......	......
Chester White, 1879	......	......	......	......	......	......	......	......
Chester White, 1880	......	248	......	......	......	381	287	......
Chester White, 1881	......	385	......	......	......	307	246	......
Chester White, 1882	......	556	280	......	......	473	342	......
Average	644	396	280	......	......	387	291	......
Victoria, 1882	......	446	350	......	......	461	220	......
Duroc or Jersey Red, 1882	......	504	335	......	......	405	320	......
Essex, 1878	......	......	......	......	......	470	......	......
Essex, 1879	472	295	......	162	440	276	317	153
Essex, 1880	......	......	......	......	......	......	......	......
Essex, 1881	......	......	......	212	......	366	216	......
Essex, 1882	......	437	228	......	......	405	230	......
Average	472	366	228	187	440	379	254	153
Other Small Breeds, 1878	......	......	......	......	......	......	......	......
Other Small Breeds, 1879	......	......	......	......	......	410	370	......
Other Small Breeds, 1880	......	......	......	......	......	......	......	......
Other Small Breeds, 1881	......	......	......	......	......	......	......	......
Average	......	......	......	......	......	410	370	......

Class D—Swine—*Continued.*

Breed.	Barrow 2 years old or over....	Barrow 1 and under 2 years.	Barrow under 1 yr. and over 6 months.....	Barrow under 6 months.....	Sow 2 yrs. old or over........	Sow 1 and under 2 yrs old.	Sow under 1 year and over 6 months.....	Sow under 6 months.....
Grades or Crosses, 1878...	....	522	298	....	....	....	....	....
Grades or Crosses, 1879........	589	436	361	....	620	478	365	....
Grades or Crosses, 1880........	....	490	350	....	....	306	353	....
Grades or Crosses, 1881........	....	410	326	....	....	460	319	....
Grades or Crosses, 1882........	....	477	326	....	....	404	320	....
Average	589	463	328	....	620	412	346	....

Consolidated average weights of the rings of the various breeds of hogs and their crosses, exhibited in 1878, 1879, 1880, 1881 and 1882.

Berkshire..........................	....	433	260	190	635	459	361	162
Poland China	698	497	319	192	600	488	308	175
Chester White............	644	396	280	....	....	387	291	....
Victoria	....	446	350	....	....	461	220	....
Duroc or Jersey Red..........	....	504	335	....	....	405	320	....
Other Large Breeds	....	....	....	....	....	....	....	....
Essex	472	366	228	187	440	379	254	153
Other Small Breeds...........	....	....	....	....	....	....	....	....
Grades or Crosses	589	463	328	....	620	412	346	....

EARLY MATURITY.

BARROWS SHOWING MOST RAPID GROWTH.

Barrow 1 and under 2 years.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Suffolk Cross	439	522	1.19
1879	Grade Suffolk........	431	473	1 09
1880	Poland China........	467	483	1.03
1881	Poland China........	385	444	1.15
1882	Jersey Red...........	416	533	1.28

Barrow under 1 year.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Poland China........	158	203	1.28
1879	" "	237	334	1 40
1880	" "	185	217	1.17
1881	Essex.	177	207	1.16
1882	Chester White.......	200	280	1.40

DRESSED SWINE.

Barrow 1 and under 2 years.

Exhibiter.	Name of Animal.	Breed.	Age in days	Live wt. at slaughter.	Average gain per day since birth	Weight dressed carcass and head	Per cent. carcass and head, to gross	Weight head	Weight leaf lard	Weight gut fat	Weight lungs & heart.	Weight liver and melt	Weight paunch	Weight guts	Weight blood	Weight hair, wet	Waste and shrinkage.
Scheidt & Davis, Dyer, Ind.	Bouncer	Victoria	539	579	1 09	505	84	43	21½	4½	4	4½	2	18½	8	5½	5½
Taylor Bros., Waynesville.	Billy	Berkshire	502	367	0 73	310	84	27½	14½	4	3	4½	2½	14	6	4	4½
G. W. Stoner, La Place	Larder	Jersey Red	416	486	1.17	420	.86	34½	18½	5½	3	4	4	18½	5	6	1½
Average			486	477	1 00	412	.85	35	18	5	3	4	3	17	6	5	4

Premium, $10, to barrow Bouncer, exhibited by Scheidt & Davis, Dyer, Ind.

ssed *Swine*—Continued

Barrow under 1 year old.

Exhibiter.	Name of Animal.	Breed.	Age in days	Live wt. at slaughter	Average gain per day since birth	Weight dressed carcass and head	Per cent. carcass and head to gross	Weight head	Weight leaf lard	Weight gut fat	Weight lungs & heart	Weight liver and melt	Weight paunch	Weight guts	Weight blood	Weight hair, wet	Waste and shrinkage.
Scheidt & Davis, Dyer, Ind.	Dick	Victoria	322	380	1 18	330	.87	28	14	3½	3	4	2	16	4	2½	1
Taylor Bros, Waynesville.	Rob	Essex	259	265	1 00	225	85	20	10	3½	2½	3½	2	12	3	2½	1
Thos. Bennett, Rossville	Muskogee III	Jersey Red.	262	302	1 15	260	86	24½	12	3	3	4	1½	10½	4½	3	½
Average			281	316	1 11	272	86	24	12	3	3	4	2	13	4	3	1

Premium, $10, to barrow Dick, exhibited by Scheidt & Davis, Dyer, Ind.

ROLL OF HONOR.

The following table gives the ages from month to month and weight of noted steers exhibited at the five Fat Stock Shows (nearest the ages named) that have made the largest average gain per day since birth.

The large average gain per day made by the representative animals named in the following list, makes it proper that special attention should repeatedly be called to these remarkable results in feeding, as well as skill in breeding animals of such unusual aptitude for rapid growth.

The thirty-four animals named in the table represent the five Fat Stock Shows as follows: 1878, three steers; 1879. ten steers; 1880, nine steers; 1881, six steers; 1882, six steers.

The number of each of the various breeds and crosses included in the table are as follows: Shorthorns, 8; Grade Shorthorns, 22; Grade Herefords, 4.

The breeders of the several States are represented as follows: Illinois, twenty-six steers; Kentucky, five; Canada, two; Michigan, one.

Roll of Honor.

Month, 30 days.	No. days	Age of steer in days nearest to time named.	Breed.	Weight.	Average gain per day in pounds.	Exhibited.		Name of Animal.
						Year.	By.	
			Steer 1 and under 2 years.					
12	260							
13	390	384	Shorthorn	1,140	2 97	1182	Cobb & Phillips.	Cassius V
14	420	422	Grade Shorthorn.	1,104	2 61	1880	John D. Gillett	Robinson Crusoe
15	450	454	Grade Shorthorn	1,230	2 70	1882	John D Gillett.	Waixel
16	480	480	Grade Hereford	1,152	2 40	1879	T. L Miller	Putnam
17	510	513	Grade Shorthorn.	1,373	2 67	1879	John D. Gillett.	Jim Smith
18	540	544	Grade Shorthorn	1,401	2 57	1879	John D. Gillett.	Albert Pell
19	570	564	Grade Shorthorn	1,286	2 46	1879	Amos F. Moore	Hawks
20	600	585	Grade Shorthorn	1,450	2 47	1880	Cobb & Phillips	Sibley
21	630	620	Grade Shorthorn.	1,390	2.24	1882	C. L Blanchard.	Drift
22	660	650	Shorthorn	1,480	2 28	1878	J. N. Brown's Sons	Duke Sangamon
23	690	688	Grade Shorthorn	1,880	2 73	1880	John D. Gillett	Porter
			Steer 2 and under 3 years.					
24	720	719	Grade Shorthorn	1,565	2.17	1881	J. H. Potts & Son	Major
25	750							
26	780	783	Shorthorn	1,635	2.09	1881	J. D Gillett	Chance
27	810	811	Grade Shorthorn	1,605	1 97	1881	J. D. Gillett	Chub
28	840	832	Grade Hereford	1,845	2 21	1880	T. L. Miller	Conqueror
29	870	858	Grade Shorthorn	2,220	2 59	1882	J D. Gillett	Mammoth
30	900	908	Shorthorn	1,825	2 01	1880	John B. Sherman	Belmont
31	930	940	Grade Shorthorn	1,975	2.10	1880	J. D. Gillett	Blood
32	960	964	Grade Shorthorn	1,940	2 01	1881	J. D. Gillett	Cherry
33	990	977	Grade Shorthorn	2,081	2 12	1879	J. D. Gillett	Barney
34	1,020	1,005	Shorthorn	1,925	1 91	1880	Wm. Sandusky	Abe Renic
35	1,050	1,054	Grade Hereford	1,925	1.82	1881	T. L. Miller	Kansas
			Steer 3 and under 4 years.					
36	1,080	1,084	Shorthorn	1,950	1 79	1878	Van Meter & Hamilton	Young Mary Steer 8th
37	1,110	1,105	Grade Shorthorn	1,855	1 67	1881	Morrow & Muir	Frosty
38	1,140	1,132	Grade Shorthorn	2,024	1 76	1879	J. D. Gillett	Cap. Nels. Morris
39	1,170	1,176	Grade Shorthorn	2,130	1.81	1881	J D. Gillett	Phil. Sheridan
40	1,200	1,190	Grade Hereford	2,145	1.80	1881	T. L. Miller	Conqueror
41	1,230	1,237	Grade Shorthorn	2,095	1.69	1881	J. D. Gillett	McMullen

42	1,260	1,265	Grade Shorthorn.	2,400	1 90	1882	H. & I. Groff.	Canadian Champion..........
43	1,290	1,298	Grade Shorthorn.	2,305	1 70	1878	Van Meter & Hamilton........	Brand Steer ....
44	1,320	1,305	Shorthorn	2,535	1 94	1882	H. & I. Groff .. ,..............	King of the West..............
45	1,350	1,335	Grade Shorthorn................	2,060	1 54	1879	J. H. Graves	Nichols ....
46	1,380	1,367	Shorthorn	2,350	1 71	1880	Wm. Sandusky	Vermilion.........................
47	1,410	1,411	Grade Shorthorn............ ...	2,030	1.44	1880	J. H. Graves......	Morrow...........................

CLASS A—CATTLE.

Table giving number of entries of Cattle of the several ages and breeds, including grades and crosses, exhibited at the 1878, 1879, 1880, 1881 and 1882 Fat Stock Shows:

Cattle.	Shorthorn	Hereford	Devons	Other pure breeds	Grades or Crosses	Sweepstakes	Gr'd Sweepstakes	Car loads	Dressed Bullocks.	Heaviest fat Steer	Early maturity	Cost of production	Total
Steer 4 years old or over—													
1878	2	1	2	...	12	14	...	...	...	...	...	...	31
1879	5	4	1	...	13	19	...	2	...	...	...	...	51
1880	...	...	...	...	...	...	...	...	...	...	...	...	...
1881	...	...	...	...	...	...	...	...	...	...	...	...	...
1882	...	...	...	...	...	...	...	...	...	...	...	...	...
Steer 3 and under 4 years—													
1878	2	3	2	...	10	8	...	2	...	...	...	...	27
1879	2	2	1	...	29	20	...	3	...	...	...	...	57
1880	4	1	2	...	18	18	...	2	3	...	10	...	58
1881	3	2	2	...	34	25	...	4	3	...	10	...	83
1882	5	1	...	...	24	20	...	4	5	...	11	2	72
Steer 2 and under 3 years—													
1878	5	1	...	...	12	13	...	2	...	...	...	...	33
1879	4	1	...	...	31	21	...	3	...	...	...	...	60
1880	5	3	1	...	20	22	...	1	2	...	10	...	64
1881	7	...	3	...	33	27	...	2	2	...	10	...	84
1882	...	3	...	...	19	17	...	3	3	...	8	3	56
Steer 1 and under 2 years—													
1878	3	...	...	...	2	5	...	...	...	...	...	...	10
1879	6	3	1	...	14	14	...	1	...	...	...	...	39
1880	1	1	...	...	22	15	...	1	1	...	10	...	51
1881	...	...	...	...	5	6	...	...	1	...	8	...	20
1882	3	1	...	...	17	13	...	1	3	...	12	4	54
Cow 3 years old or over—													
1878	6	3	1	...	...	6	...	...	...	...	...	...	16
1879	8	2	2	1	1	10	...	...	...	...	...	...	24
1880	3	1	...	...	1	5	...	...	1	...	...	...	11
1881	4	3	3	...	2	8	...	...	...	...	...	...	20
1882	8	2	...	...	3	9	...	...	...	...	...	...	22
All ages—													
1878	...	...	...	...	...	...	21	...	...	...	...	...	21
1879	...	...	...	...	...	...	63	...	...	...	...	...	63
1880	...	...	...	...	...	...	58	...	...	13	...	...	71
1881	...	...	...	...	...	...	30	...	...	10	...	...	40
1882	...	...	...	...	...	...	27	...	...	7	...	...	34
Total—													
1878	18	8	5	...	36	46	21	4	...	...	...	...	188
1879	25	12	5	1	88	84	63	9	...	7	...	...	303
1880	13	6	3	...	61	60	58	4	7	13	30	...	255
1881	14	5	8	...	74	66	30	6	6	10	28	...	247
1882	16	7	...	...	63	59	27	8	11	7	31	9	238

CLASS C—SHEEP.

Table giving number of entries of Sheep of the several ages and breeds, including grades and crosses, exhibited at the 1878, 1879, 1880, 1881 and 1882 Fat Stock Shows:

Breed.	Cotswold	Other long wools	Sothdown	Oth'r mid'le wools	American Merino	Other fine wools	Grades or Crosses	Sweepstakes	Gr'nd sweepstak's	Car loads	Dressed carcass	He'viest fat Sheep	Total
Wether 2 years old or over—													
1878													
1879	5	2	10	4			18	21					60
1880	5	1	9		1		7	14		2	3		42
1881	5		5	2			2	10		2			26
1882	5	3	3	3			5	10		1			30
Wether 1 and under 2 years—													
1878	1							2					3
1879	5		8				12	12					37
1880	2		5	2	2		4	11			3		26
1881	3		5	2			4	9					23
1882	4	2	3	1			4	9					23
Wether under 1 year—													
1878	2												2
1879	1		2				4	6					13
1880	1		1		1		3	4					10
1881			2					5					10
1882	1	2	3	1			3	6					16
Ewe 2 years old or over—													
1878	3							4					7
1879	16		8	2			10	22					58
1880	1		2		2		1	4					10
1881	1		1				1	3					6
1882	3	1	1	3	4		3	6					21
Ewe 1 and under 2 years—													
1878								1					1
1879	13		2	1			4	16					36
1880			2	1	2		1	4					10
1881	7						4	6					17
1882	1	1		5	1		4	4					16
Ewe under 1 year—													
1878								2					2
1879	4	1	1				2	5					13
1880		1	2	1			3	4					11
1881	5						6	8					19
1882	1			1	1		3	3					9
All ages—													
1878									9				9
1879									49				49
1880									19			7	26
1881									14			6	20
1882									23			7	30
Total entries—													
1878	6							9	9				24
1879	44	3	31	7			50	82	49	2			284
1880	9	2	21	4	8		19	41	19	2	3	7	138
1881	21		13	4			20	41	14	2		6	121
1882	15	9	10	14	6		22	38	23	1		7	145

CLASS D—SWINE.

Table giving number of entries of Swine of the several ages and breeds, including grades and crosses, exhibited at the 1878, 1879, 1880, 1881 and 1882 Fat Stock Shows:

Breed.	Berkshire	Poland China	Chester White	Victoria	Duroc or Jersey Red	Essex	Other small bre'ds	Grades or Crosses	Sweepstakes	Grand Sweepst'ks	Car loads	Heaviest fat hog	Dressed carcass	Total
Barrow 2 years old or over—														
1878	...	2	1	...	...	...	..	...	4	...	...	...	...	7
1879	...	2	...	...	...	2	...	...	3	...	...	...	...	7
1880	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1881	...	...	...	...	..	...	...	...	...	...	...	...	...	...
1882	...	...	...	..	...	...	...	...	...	...	...	...	...	...
Barrow 1 year old and under 2 years—														
1878	...	2	...	...	...	..	...	1	7	...	...	...	...	10
1879	5	6	...	...	...	2	...	2	15	...	...	...	...	30
1880	...	3	...	...	..	...	...	3	5	...	...	...	...	11
1881	1	3	1	...	...	...	...	1	7	...	...	...	...	13
1882	3	13	3	2	3	4	...	5	23	...	3	...	3	61
Barrow 6 months old and under 1 year—														
1878	...	3	...	...	...	..	...	2	5	...	...	...	...	10
1879	...	4	...	...	...	..	...	2	7	...	...	...	...	13
1880	...	2	2	...	...	...	...	2	3	...	...	...	...	9
1881	...	..	...	..	...	3	..	2	5	...	...	...	...	10
1882	1	2	1	3	2	4	..	1	10	...	...	..	3	27
Barrow under 6 months old—														
1878	...	1	...	...	...	...	...	...	3	...	...	...	...	4
1879	5	2	...	...	...	1	...	...	7	...	...	...	..	15
1880	...	...	...	...	...	...	..	...	...	...	...	...	..	...
1881	...	...	...	..	...	...	..	...	...	...	...	..	...	...
1882	...	...	...	...	...	...	..	...	...	...	...	...	...	...
Sow 2 years old or over—														
1878	...	1	...	...	...	..	.	...	...	...	...	...	...	1
1879	1	3	...	...	...	3	...	3	8	..	...	...	...	18
1880	...	...	...	..	...	...	...	...	...	...	...	...	..	...
1881	..	...	...	...	.	..	...	...	...	...	...	...	..	...
1882	...	...	...	..	...	...	...	...	...	..	...	...	...	...
Sow 1 and under 2 years—														
1878	2	1	...	..	...	1	...	...	...	...	...	...	...	4
1879	1	3	...	...	...	2	...	2	3	...	...	...	...	11
1880	1	1	1	...	..	...	...	2	3	...	...	...	...	8
1881	1	1	1	...	...	2	...	2	7	...	...	...	...	15
1882	1	7	3	1	1	2	...	1	11	...	...	..	...	27
Sow 6 months old and under 1 year—														
1878	..	...	...	...	...	...	...	...	...	...	...	...	...	...
1879	3	3	...	...	...	...	4	1	8	...	..	...	...	19
1880	...	3	2	...	...	...	...	2	5	...	...	...	...	12
1881	...	2	2	...	...	3	...	4	7	...	...	...	...	18
1882	2	4	2	1	1	4	...	...	9	...	...	...	...	23
Sow under 6 months old—														
1878	...	1	...	...	...	...	...	...	...	...	...	...	...	1
1879	3	1	...	...	...	2	...	...	6	...	...	...	...	12
1880	...	...	...	...	...	...	..	...	...	...	...	...	...	...
1881	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1882	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total—														
1878	2	11	1	...	...	1	...	3	19	13	...	...	...	50
1879	18	24	...	...	...	12	4	10	57	16	1	...	...	142
1880	1	9	5	...	...	...	...	9	16	14	...	2	...	56
1881	8	6	4	...	...	8	...	9	26	16	...	10	...	82
1882	7	26	8	7	7	14	...	7	53	42	8	5	6	185

1878.

State.	CATTLE.		SHEEP.		HOGS.	
	No. entries.	Amount premiums paid.	No. entries.	Amount premiums paid.	No. entries.	Amount premiums paid.
Illinois	83	$1,320	6	$100	36	$340
Kentucky	26	145				
Missouri	13					
Indiana	9	65			9	50
Iowa	6	25				
Wisconsin	1					
Michigan			5	40	3	20
Ohio					3	20
Canada			13	150		
Total	138	$1,555	24	$290	51	$430

1879.

Illinois	260	$1,970	199	$505	112	$305
Kentucky	16	200				
Missouri	4	15				
Indiana	8	50			11	45
Iowa	3	75				
Wisconsin	6		11			
Michigan			16	70	19	105
Ohio	6					
Canada			58	225		
Total	303	$2,310	284	$800	142	$455

1880.

Illinois	229	$1,305	110	$345	42	$215
Iowa	13	125				
Kentucky	6	125				
Ohio	5	15				
Indiana	2				14	150
Michigan			2	25		
Canada			26	170		
Total	255	$1 570	138	$540	56	$365

1881.

Illinois	204	$1,580	68	$339	49	$313
Wisconsin	14	170				
Kentucky	24	125	7	60		
Iowa	10	85				
Canada	3	80	35	190		
Michigan			11	54	12	79
Indiana					23	80
Total	255	$2,040	121	$643	84	$472

1882.

Illinois	165	$1,400	69	$310	143	$725
Ohio	10	30	5	17		
Canada	21	410	41	216		
Indiana	9	120			26	110
Iowa	27	420			3	20
Michigan	6		30	215	13	35
Total	238	$2,380	145	$758	185	$890

Total number of entries of Cattle, Sheep and Hogs from the several States, at the Fat Stock Shows of 1878, 1879, 1880, 1881 and 1882, as well as the total premiums paid thereon for the years named:

State.	Cattle.		Sheep.		Hogs.	
	No. entries.	Amount premiums paid.	No. entries.	Amount premiums paid.	No. entries.	Amount premiums paid.
Illinois	941	$7,575	452	$1,599	382	$1,898
Kentucky	72	595	7	60	...	....
Missouri	17	15	....	....	...	....
Indiana	28	235	....	....	83	135
Iowa	59	730	...	....	3	20
Wisconsin	21	170	11	....	...	....
Michigan	6	....	64	404	47	239
Ohio	21	45	5	17	8	20
Canada	24	490	178	951	..	....
Total	1189	$9,855	712	$3,031	578	$2,612

GOOD PRICES.

Not the least of the important results growing out of Fat Stock Shows is the attraction to the exhibition and the Union Stock Yards at Chicago, of the leading butchers from Eastern and Western cities for the purchase of Christmas meat.

The competition among butchers for the possession of the stock exhibited at the shows enabled the owners to sell to the best advantage, as will be seen by the following figures.

Butchers, appreciating the advantage of the shows in bringing together annually a large number of the best meat animals to be found in the West, have attended the exhibition from year to year in increased numbers.

The prices obtained for cattle at the last show, so far as reported, are as follows.

The average price obtained on each breed and their grades is given for 1880, 1881 and 1882:

SALES—CLASS A—CATTLE

Seller.	Breed.	Name of Animal.	Age in days	Average gain per day since birth	Weight	Price received per 100 lbs. gross	Average increase in value per day since birth	*Price obtained over market rates at stock yds, 100 gross	Amount received over market value.
C. Dodge & Son, New South Lyme, Ohio	Shorthorn	Ohio I.	1,316	1 40	1,840	$8 50	$0 12	$2 50	$46 00
" " " " " "	"	Ohio II.	1,322	1.44	1,910	8 50	12	2 50	47 75
H. & I. Groff, Elmira, Canada	"	King of the West	1,305	1.94	2,335	12 00	23	6 00	139 90
Pickrell, Thomas & Smith, Harristown, Ill	"	Rosa Bell	1,589	1 13	1,800	8 50	09	2 50	45 00
David Grant, Petersburg, Ill	"	Lady Garfield	1,621	1 04	1,685	6 00	06		
1882, Average 5 head						$8 70			
1881, " 3 "						6 42			
1880, " 6 "						6 81			
H. & I. Groff, Elmira, Canada	Grade Shorthorn	Young Aberdeen	902	1 93	1,740	11 00	21	5 00	87 00
" " " "	" "	Canadian Champion	1,265	1.90	2,400	12 00	23	6 00	144 00
D. M. Moninger, Galvin, Iowa	" "	Champion	1,073	2 05	2,200	8 00	16	2 00	44 00
" " "	" "	Harry West	776	2.04	1,585	8 00	16	2 00	31 70
" " "	" "	Knight	1,052	1.73	1,820	8 00	14	2 00	36 40
" " "	" "	Porter	1,055	1 84	1,940	8 00	15	2 00	38 80
" " "	" "	Nellie	2,039	0.97	1,996	8 00	08	2 00	39 90
" " "	" "	Smith	1,050	1.79	1,880	8 00	14	2 00	37 60
" " "	" "	Shaffer	1,017	1 84	1,875	8 00	15	3 00	37 50
" " "	" "	Col Scott	1,034	1 84	1,905	8 00	15	2 00	38 10
" " "	" "	Clarkson	991	1.82	1,805	8 00	14	2 00	36 10
" " "	" "	Grinnell	1,011	1.83	1,850	8 00	15	2 00	37 00
" " "	" "	Champion Iowa	715	2 31	1,655	8 00	18	2 00	33 10
" " "	" "	Tom Brown	1,174	1.65	1,945	8 00	13	2 00	38 90
" " "	" "	Loring	1,404	1.47	2,065	8 00	12	2 00	41 30
" " "	" "	Bennett	1,080	1.65	1,785	8 00	13	2 00	35 70
" " "	" "	Dobbin	1,420	1.38	1,970	8 00	11	2 00	39 40
" " "	" "	Kimball	1,274	1.52	1,940	8 00	12	2 00	38 80
" " "	" "	Ward	1,415	1.43	2,030	8 00	11	2 00	40 60
" " "	" "	Wick	1,233	1.72	2,125	8 00	14	2 00	42 50

Sales—Continued.

Seller.	Breed.	Name of Animal.	Age in days	Average gain per day since birth	Weight	Price received per 100 lbs. gross	Average increase in value per day since birth	*Price obtained over market rates at stock yds, 100 gross	Amount received over market value
D. M. Moninger, Galvin, Iowa	Grade Shorthorn	Sherman	1,218	1.75	2,135	$8 00	$0 14	$2 00	$45 70
" " "	" "	Barnes	1,294	1 55	2,005	8 00	12	2 00	40 10
1882, Average 22 head						$8 32			
1881, " 37 "						7 48			
1880, " 4 "						6 05			
M. H. Cochrane, Compton, Canada	Hereford	Sir Richard	1,121	1.57	1,765	8 50	12	2 50	44 12
1881, Average 5 head						$9 00			
1880, " 2 "						12 50			
G. S. Burleigh, Mechanicsville, Iowa	Grade Hereford	Broad Horns	1,248	1 30	1,620	7 00	09	1 00	16 20
" " "	" "	Jones	1,110	1.62	1,805	7 00	11	1 00	18 05
C. M. Culbertson, Chicago, Ill	" "	Solomon	1,285	1.55	1,990	7 00	11	1 00	19 90
" "	" "	Spot Face	1,415	1.30	1,845	9 00	12	3 00	55 35
" "	" "	Roan Boy	685	2.41	1,650	7 00	17	1 00	16 50
1882, Average 5 head						$7 40			
1881, " 11 "						9 41			
1880, " 2 "						12 50			
Total									$1,450 97

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* The price for choice export cattle for week of show did not average over $6 00 per 100 pounds gross.

SALES—CLASS C—SHEEP.

Seller.	Breed.	Name of Animal.	Age in days	Average gain per day since birth	Weight	Price received per 100 lbs gross	Average increase in value per day since birth	*Price obtained over market rates at stock yds, 100 gross	Amount rec'vd over market value
J. A. Brown & Son's, Decatur	Cotswold	Smut Lamb	603	0 22	136	$7 00	$0 01	$2 50	$4 40
" " "	"	Queen	986	0 31	305	7 00	02	2 50	7 62
" " "	"	Smut Face	607	0 36	219	7 00	02	2 50	5 47
" " "	"	Upstart	607	0 34	204	7 00	02	2 50	5 10
" " "	"	Curley	964	0 26	247	7 00	02	2 50	6 17
" " "	"	Dick	966	0 30	292	7 00	02	2 50	7 30
" " "	"	Leggy	960	0 27	263	7 00	02	2 50	6 57
1882, average 7 animals						$7 00			
B. Waddell, Marion, Ohio	Grade Merino	Ben	1,035	0.24	153	8 50	02	4 00	10 12
" " "	"	Will	1,032	0 25	253	8 50	02	4 00	10 12
" " "	"	Fant	1,029	0 23	241	8 50	02	4 00	9 64
" " "	"	George	1,757	0.15	255	8 50	01	4 00	10 20
" " "	"	Joe	1,754	0 12	218	8 50	01	4 00	8 72
1882, average 5 head						$8 50			
Total									$91 43

*The price for strictly choice grades of sheep for the week of the show did not average over $4.50 per 100 pounds gross.

SALES—CLASS D—SWINE

Seller.	Breed.	Name of Animal.	Age in days.	Average gain per day since birth	Weight	Price received per 100 lbs. gross	Average increase in value per day since birth	*Price obtained over market rates at stock yds, 100 gross	Amount rec'vd over market value
Harry Davis, Dyer, Ind	Poland China	Flossy	523	0 80	422	$7 00	$0 04	$0 50	$2 11
J. A. Brown & Son, Decatur	Chester White	Lump	569	1 14	650	7 50	08	1 00	6 50
" " "	"	Lady Brown	564	0 92	521	7 50	07	1 00	5 21
" " "	"	Tom	200	1 40	280	7 50	10	1 00	2 80
" " "	"	Folly	200	1.37	275	7 50	10	1 00	2 95
1882, average 4 head						$7 50			
Thos. Bennett, Rossville	Jersey Red	Mary	553	0.73	405	7 00	05	50	2 02
" " "	"	Tom	553	0 94	520	7 00	06	50	2 60
" " "	"	Dick	553	0 93	513	7 00	06	50	2 56
" " "	"	Harry	553	0 87	480	7 00	06	50	2 40
" " "	"	Muskogee 2d	291	1.26	368	6 50	08		
" " "	"	Muskogee 3d	262	1.15	302	6 50	07		
1882, average 6 head						$6 83			
Total									$28 95

he price for choice packing hogs for the week of the show did not average over $6 50 per 100 pounds gross.

COMPARISON OF SALES.

The following table is given in order that a comparison may be made, so far as reported, of the prices obtained for stock exhibited and sold at the last three Fat Stock Shows:

Year.	BREED CATTLE.	No. head.	Price per 100 pounds, gross.
1880	Shorthorn	6	$6 81
1881	"	8	6 42
1882	"	5	8 70
Average		5	$7 31
1880	Grade Shorthorn	2	6 05
1881	" "	37	7 48
1882	" "	22	8 32
Average		20	$7 28
1880	Hereford	1	12 50
1881	"	5	9 00
1882	"	1	8 50
Average		2	$10 00
1880	Grade Hereford	2	12 50
1881	" "	11	9 41
1882	" "	5	7 40
Average		6	$9 77
1880	Devon	2	6 50
1881	"	6	6 50
Average		4	$6 50
1880	Grade Devon		
1881	" "	2	6 00
Average		2	$6 00
1880	Ayrshire		
1881	"	1	6 00
Average		1	$6 00
	BREED SHEEP.		
1882	Cotswold	7	7 00
Average		7	$7 00
1882	Grade Merino	5	8 50
Average		5	$8 50
	BREED SWINE.		
1882	Poland China	1	7 00
Average		1	$7 00
1882	Chester White	4	7 50
Average		4	$7 50
1882	Jersey Red, or Duroc	6	6 88
Average		6	$6 88

CLASS E—FAT POULTRY.

Table giving number of entries of Fat Poultry exhibited at the 1878, 1879, 1880, 1881 and 1882 Fat Stock Shows:

Poultry.	1878.	1879.	1880.	1881.	1882.
TURKEYS.					
Turkey Cock, fowl	......	1	4	2	3
Turkey Cock, hen	...			2	3
Turkey Hen, fowl	......	1	3	1	3
Turkey Hen, chick	......			1	2
Heaviest Fat Turkey	......	.. .	....	1	2
GEESE.					
Gander, fowl	.....	1	3	3	4
Gander, chick	......			2	3
Goose, fowl	......	1	2	4	4
Goose, chick	......			1	3
Heaviest Fat Gander	......	.....	......	3	3
DUCKS.					
Drake, fowl	1	2	2	3	3
Drake, chick				3	3
Duck, fowl	1	2	2	3	3
Duck, chick				3	2
Heaviest Fat Drake	....	......	.....	3	3
ASIATIC FOWLS.					
Cock, fowl	.....	.....	......	2	4
Cock, chick	.....	.....	......	4	3
Hen, fowl	......	.....	......	3	4
Hen, chick	......	. . ..	.....	3	3
Heaviest Fat Fowl	.....	......	.....	2	2
OTHER THAN ASIATICS.					
Cock, fowl	......	......	.....	1	3
Cock, chick	.....	.....	......	1	4
Hen, fowl	......	......	....	1	4
Hen, chick	......	......	......	1	4
Heaviest Fat Fowl	......	......	......	1	2
DRESSED POULTRY.					
Dressed Cock, fowl	1	2	8	4	3
Dressed Cock, chick				2	3
Dressed Hen, fowl	......	2	11	2	4
Dressed Hen, chick	......			2	4
Heaviest Fat Fowl	......	......	......	1	2
DISPLAYS, ETC.					
Capon	1	.....	......	......	1
Display Live Fat Poultry	......	2	4	2	2
Display Dressed Poultry	......	......	......	1	2
Total	4	14	39	67	98

WINTER MEETING, 1883.

Department of Agriculture,
Springfield, Tuesday, Jan. 2, 1883.
10 o'clock A. M.

Board met in regular annual session.

President Scott in the chair.

Present—President Scott, ex-President Gillham, Vice-Presidents Emery, Haskell, Moore, Dysart, Snoad, Vittum, David, Beaty, Voorhies, Pullen, Gore and Washburn.

Absent—Vice-Presidents Ellsworth, Reynolds, Judy, Smith and Landrigan.

Minutes of the meetings of the Board held during the week of the Fair at Peoria, September 25 to 30, were read and,

On motion of Mr. Haskell,

Approved.

Minutes of the meeting of the Board held during the week of the Fat Stock Show at Chicago, November 16–23, were read and,

On motion of Mr. Beaty,

Approved.

The following communication from Hon. Lewis Ellsworth was read.

Motion of Mr. Gillham carried,

That the communication be placed upon the record.

COMMUNICATION.

Naperville, Ill., January 1, 1883.

To the President and Members Illinois State Board of Agriculture, Springfield, Ill.:

My Friends:—It is a severe disappointment to me that I am not able to meet with you in this, the last meeting of the Board of 1881 and 1882. The condition of my health will not permit it. My long association with most of you, gentlemen, and my much longer connection with the State Agricultural organization, commencing thirty years ago with the organization of the Illinois State Agricultural Society, has created ties that will continue to strengthen and brighten to the end of my sojourn in earth's life. My connection as a member of the Board terminates with the close of your present meeting, but not my deep interest for the highest usefulness of the Agricultural Department of the State, that will not lessen or grow dim.

Gentlemen, permit me to tender you, collectively and individually, my highest regards and fraternal attachment.

Very truly your friend,

LEWIS ELLSWORTH.

Mr. Gillham introduced the following preamble and resolution, which were,

On motion of Mr. Moore, adopted:

WHEREAS, The continued severe affliction of our esteemed friend and co-laborer, Hon. Wm. M. Smith, of McLean county, will not admit of his participation in this meeting of the Board; therefore, be it

Resolved, That the members of the Illinois State Board of Agriculture, individually and collectively, most deeply regret the forced absence of Mr. Smith, and sincerely sympathise with him in his affliction, and do most earnestly pray for his early convalesence and speedy return to his usual good health and his wide field of usefulness.

Resolved, That the Secretary of this Board be, and is hereby instructed to transmit a copy of the above preamble and resolution to the Hon. W. M. Smith, and that the same be spread upon the records of the Department.

The annual report of the Secretary was read, and,

On motion of Mr. Haskell,

Received and placed on file. (See appendix.)

On motion of Mr. Moore,

The following reports of standing committees, etc., were received and adopted:

REPORT OF COMMITTEE OF ARRANGEMENTS, ILLINOIS STATE FAIR.

To the State Board of Agriculture:

The committee of arrangements held but one meeting, and submit the proceedings thereof as part of their report.

The accommodations provided as called for in the specifications of requirements were not sufficient for the increased wants of exhibiters at the last two fairs. The entries of horses and cattle the last two years have made it necessary to erect a large number of stalls, and to accommodate future exhibitions it is suggested that the next Board provide for at least 3,000 linear feet of stalls for horses and the same for cattle.

The heavy draft horses, as well as the track horses, require stalls more than six feet wide, and it has been the custom to take out partitions and give many of these horses double stalls, which largely reduces the number contemplated by the Board.

The specifications having been filled by the Peoria committee for the preceding Fair, there was still considerable work this season for the committee of arrangements to perform in constructing additional stalls and having the grounds cleaned and put in readiness for the Fair.

Respectfully submitted,

JAMES R. SCOTT,
D. B. GILLHAM,
D. W. VITTUM, JR.,
J. L. MOORE,
SAMUEL DYSART,
D. E. BEATY,
B. PULLEN,
GEO. S. HASKELL.

MINUTES OF THE MEETING OF THE COMMITTEE OF ARRANGEMENTS FOR THE STATE FAIR.

PEORIA HOUSE, PEORIA, July 20, 1882.

Committee of Arrangements met, pursuant to call of the Chairman.

Present—Messrs. Gillham, Beaty, Moore, Dysart, Vittum and Fisher.

In the absence of President Scott, Mr. Gillham was called to the chair.

Motion Mr. Vittum carried,

That Mr. Snoad, of the Auditing Committee, be invited to participate in the meeting.

Motion Mr. Vittum carried.

That R. H. & C. M. Avery, manufacturers of corn planters, be assigned one acre of ground to show the practical workings of their planter, provided the owners of the Fair Grounds make no objection.

Motion Mr. Beaty carried,

That the Superintendent of Grounds be instructed to wait upon the Peoria committee and request them to have the halls, stalls and pens and Fair Grounds cleaned, and all the accommodations put in readiness for the Fair.

On motion Mr. Vittum, adjourned subject to call of the President.

S. D. FISHER, Secretary. JAMES R. SCOTT, Chairman.

REPORT OF COMMITTEE OF ARRANGEMENTS—FAT STOCK SHOW.

To the State Board of Agriculture:

The committee appointed to make the necessary arrangements for holding the Fat Stock Show, would report that contract was made with Charles Brown, of Chicago, to construct stalls and pens, etc., as follows:

100 or more horse or cattle stalls	$2 00 each
100 or more hog or sheep pens	$1 25 each
Removal platforms, etc., and returning same	$60 00
Lighting gas, as per contract	10 00
Building high fence, south of fountain	20 00
Making yard at cattle chute	6 00
Making sign frame in front	6 00

The committee would report that the following subscriptions were obtained to the general premium fund of the Fat Stock Show for 1882:

Union Stock Yards and Transit Co	$3,000 00
John B. Drake & Co., Grand Pacific	150 00
J. Irving Pearce, Sherman House	50 00
E. J. Lehman, Chicago	25 00
L. Adams & Co., Chicago	15 00
Wood Bros., Union Stock Yards	100 00
Abner Piatt, Union Stock Yards	25 00
John H. Wood & Co., Union Stock Yards	25 00
McCurdy & Beveridge, Union Stock Yards	20 00
Leland Hotel, Chicago	25 00

The following special premiums were offered by the parties named:

CLASS A—CATTLE.

Best five head of cattle, any age or breed.

Marshall Field & Co., Chicago	$250 00

LOT 6—SWEEPSTAKES RINGS.

Best Steer three and under four years.

Schuttler & Hotz, Chicago., one 3¼-inch Steel Skein Wagon, with 9-inch top box, spring seat, joint brake, Conrad's patent tongue support, tool box and stay chains, valued at	120 00

Best Steer two and under three years.

Farmers' Review, Chicago	Gold Medal, value	50 00

Best Steer one and under two years.

Western Rural, Chicago	15 00

Best Cow three years old or over.

Borden, Selleck & Co., Chicago.	An 800℔ Improved Howe Platform Scale, value	38 00

LOT 7—GRAND SWEEPSTAKES.

Best Steer or Cow in the Show.

Prairie Farmer Co., Chicago	Plate, value	50 00

LOT 8—CAR LOAD.

Best Lot of 10 Cattle two and under three years old.

Deere & Co., Moline	A Gilpin Sulky Plow, value	65 00

LOT 13—COST OF PRODUCTION.

Steer or Spayed Heifer, two and under three years old.

Breeders' Gazette, Chicago	50 00

CLASS C—SHEEP.

Best five head of Sheep, any age or breed.

Marshall Field & Co., Chicago $125 00

LOT 19—GRAND SWEEPSTAKES.

Best Wether or Ewe in the Show.

National Live Stock Journal Co., Chicago ....Challenge Cup, value 50 00

CLASS D—SWINE.

Best five head of Hogs, any age or breed.

Marshall Field & Co., Chicago 125 00

LOT 29—GRAND SWEEPSTAKES.

Best Barrow or Sow in the Show.

Western Rural, Chicago 15 00

The committee decided to appoint one-third of the judges from the most experienced feeders to be found.

As a matter of economy, a sub-committee, consisting of Messrs. Vittum, Dysart and Moore, were appointed to provide for the construction of stalls, pens, and superintend the arrangements in the Exposition Building for the holding of the Show.

The committee decided to allow the exhibition of breeding animals to the extent of the accommodations provided.

The committee gave an invitation to Dr. Loring, Commissioner of Agriculture, to deliver an address during the week of the Show, which was not accepted owing to previous engagements.

Three thousand five hundred complimentary tickets were sent to prominent citizens for the opening night of the Show.

Mr. Moore was hired to remain in the city and superintend the construction of the stalls, pens, etc.

The entire expense of constructing stalls, pens, etc., and returning the building to the company as found, was $791.32.

Respectfully submitted,

JAMES R. SCOTT,
D. B. GILLHAM,
D. W. VITTUM, Jr.,
SAMUEL DYSART,
J. L. MOORE.

REPORT OF RECEPTION COMMITTEE.

To the State Board of Agriculture:

The committee would repeat the recommendations made in a former report in reference to providing a suitable and convenient reception room for the entertainment of guests during the Fair.

It is suggested that in future specifications of requirements, the locality securing the Fair be obligated to construct and locate the President's office next the show ring, where the guests of the Board may have an opportunity of seeing to advantage the stock on exhibition.

The President's office should be two stories high, with a covered veranda on the second floor, fronting the show-ring.

The large number of representative farmers, as well as the increased number of prominent citizens engaged in various pursuits, in attendance at the Fair, was noticeable, and not only encouraging to the management, but indicative of the growing interest in this industrial exhibit of the State.

Respectfully submitted,

JAMES R. SCOTT,
D. B. GILLHAM.

REPORT OF PRINTING COMMITTEE.

To the State Board of Agriculture:

The following sums have been expended during the past year by the printing committee, amounting to $3,208 70, as per appended exhibit.

The expenses for printing, in connection with the State Fair, were $1,128.59; for the Fat Stock Show, $629 03; leaving $1,451.08 for the department work.

The committee would renew a former recommendation in reference to the printing required by this Board in the future:

"An examination of the printing vouchers demonstrates the fact that the work has been performed as economically as could be expected considering the unfavorable circumstances under which the department has been compelled to have its work done at the various job offices in the city making the lowest bid.

"Under the State contract, the printing and stationery required by the department would cost the State much less than under the present system, and insure more uniform work without unnecessary delay and inconvenience.

"It is recommended that the committee on appropriations make application for sufficient funds to cover all the expenses of printing for the Board, and have the same included in the act to provide for the ordinary and contingent expenses of the State government."

Respectfully submitted,

JAS. R. SCOTT,
J. L. MOORE,
JOHN P. REYNOLDS,
S. D. FISHER.

SPRINGFIELD JOURNAL COMPANY.

Printing crop slips	$21 50
Stationery	10 00
Programmes Belleville Institute meeting	7 50
Entry books Fat Stock Show	15 00
Entry cards Fat Stock Show	18 75
Proceedings Belleville Institute meeting	13 00
Entry books State Fair	26 00
Entry cards State Fair	22 00
Programmes Decatur Institute meeting	9 00
Total	$142 75

SPRINGFIELD REGISTER COMPANY.

December, 1881, Crop Report	$323 50
Printing crop slips	20 00
Printing circulars, postals, etc	32 80
Cost of production blanks	16 50
Speed premium lists, stall blanks, etc	17 75
Delegate credentials, circulars, etc	21 00
Blanks for reports of county boards	15 00
Total	$446 55

T. W. S. KIDD, SPRINGFIELD.

Shipping labels, etc	$18 35

W. T. DOWDALL, PEORIA.

Premium list State Fair and Fat Stock Show	$442 30

TRANSCRIPT COMPANY, PEORIA.

Badges, blanks, etc	$22 75

H. W. S. CLEVELAND, CHICAGO.

Essay for Annual Report	$33 00

RAND, M'NALLY & CO., CHICAGO.

Catalogue Fat Stock Show	$61 00

JOHN B. JEFFERY, CHICAGO.

Banners Fat Stock Show	$60 00
Posters Fat Stock Show	375 13
Total	$435.13

MARTIN KAUFMAN, CHICAGO.

Posting bills Fat Stock Show	$11 75

J. M. W. JONES STATIONERY AND PRINTING CO., CHICAGO.

Admission tickets Fat Stock Show	$33 50
Permits, etc., Fat Stock Show	145 00
Printing and stationery	7 60
Total	$186 10

SPRINGFIELD PRINTING COMPANY.

Printing and stationery	$44 13

ROSWELL BILLS, PEORIA.

Printing and stationery	$30 00

LITHOGRAPH AND ENGRAVING CO., CHICAGO.

Complimentaries State Fair	$18 00

RUBBER STAMP WORKS, CHICAGO.

Making rubber stamps	$6 40

H. W. ROKKER, SPRINGFIELD.

December, 1881, crop blanks	$12 00
April crop blanks	11 00
April Crop Report	101 00
May crop blanks	11 00
May Crop Report	146 50
June crop blanks	11 00
June Crop Report	189 75
July crop blanks	11 00
July Crop Report	147 25
August Crop Report	11 00
August crop blanks	372 25
Binding Crop Reports	20 00
Entry blanks, tickets, etc., Fat Stock Show	45 25
Printing and stationery	33 20
Envelops, letter-heads etc	83 70
Complimentaries Fat Stock Show	12 50
Printing and stationery	63 00
Total	$1,281 40

Sundry printing and stationery	$29 08
Grand total	$3,208 70

REPORT OF LIBRARY COMMITTEE.

To the State Board of Agriculture:

The committee would beg leave to report the following additions to the library, and that the live stock and agricultural papers named in the appended list have been regularly received at the Department during the past year.

The books and periodicals have been in daily use, and the number of visitors in attendance interested in the various publications in the library is increasing each year.

Respectfully submitted,

H. D. EMERY,
GEO. S. HASKELL,
S. D. FISHER.

LIST OF BOOKS.

TITLE OF WORK.

American Shorthorn Herd Book. 4 vols
American Hereford Cattle Herd Book. Vol. 12
American Devon Record. Vol. 2
American Shorthorn Record. Vol. 10
American Cotswold Record. Vol. 2
American Clydesdale Stud Book. Vol. 2
Clydesdale Stud Book, Great Britain. Vol. 4
Coates' Herd Book. Vol. 27
Holstein Herd Book. Vol 5
Jersey Herd Register. Vol. 9
Jersey Herd Book. (Pamphlet form)
Jersey Herd Book. (Annual Report)
National Register Norman Horses
Ohio Poland China Record. Vol. 2

REPORTS, ETC.

Connecticut.

Report of State Board of Agriculture

California.

Annual Report of the Board of State Viticultural Coms. '81 and '82
First Annual Report of the Chief Executive Viticultural Officers '81
Transaction California State Board Agriculture 1881
Insects Injurious to Fruit and Fruit Trees. By Matthew Cook

Florida.

Bureau of Immigration. By A. A. Robinson

Georgia.

Report of the Commissioner of Agriculture

Iowa.

Report State Board of Agriculture for 1881

Indiana.

3d Annual Report Bureau of Statistics. By Commissioner
Report State Board Agriculture for 1881
Annual Report Trade and Commerce of Indianapolis

Illinois.

Industrial University Report for 1880
14th Annual Insurance Report for 1882
4th Annual Report of the State Board of Health

Kansas.

Quarterly Report State Board of Agriculture 1881.
" " " " " 1882.

Michigan.

Report of Horticultural Society for 1881

Massachusetts.

Report State Board of Agriculture
Trans. Horticultural Society 1882

Minnesota.

Trans. State Horticultural Society, 1881

Maine.

Report of State Board of Agriculture

New Jersey.

9th Annual Report of the State Board of Agriculture
4th Annual Report of the Bureau of Statistics, 1881

New York.

Annual Report of the State for the years 1853, 1863, 1880
Bulletin No. 1, American Museum of Natural History
Annual Report New York Produce Exchange for 1881
13th Annual Report American Museum of Natural History, 1882

Ohio.

23d Annual Report Trade and Commerce of the City of Toledo

Pennsylvania.

Report State Board of Agriculture, 1881

Foreign.

Ontario Agricultural Commission Report, 5 Vols. 1, 2, 3, 4, 5
Ontario, Province of, Agricultural Reports, 1872, 1873, 1874, 1876, 1877, 1878, 1879 and 1880
Report of Fruit Growers' Association, Entomological Society
Annual Report of the Bureau of Statistics, 1877, 1878 and 1879
Journal of the Royal Agricultural Society of England, 2 Series
7th Report of the Montreal Horticultural Society, 1881
Report of the Minister of Agriculture, Manitoba, 1880 to 1881

Washington, D. C.

Report Statistics of Grape Culture and Wine Production in the U. S., 1880
Report of the Commissioner of Agriculture for 1880
Report of the Commissioner of Agriculture for 1881
Quarterly report of the Chief of the Bureau of Statistics

Wisconsin.

Trans. Wisconsin Academy of Science 1877 to 1881

Miscellaneous.

Rural Affairs, by L. Tucker & Sons, Vols. 1, 2, 3, 4, 5, 6, 7, 8 and 9
Newspaper and Bank Directory of the World, Vols. 1 and 2, by H. P. Hubbard
The Great West Attractions and Resources
Professional Papers of the Signal Service, No. 2, 4, 5, 6 and 7

The following is the list of periodicals received at the office during the year:

Name of Paper.	Location.
Monitor	Springfield
Coleman's Rural World	St. Louis
Prairie Farmer	Chicago
The Western Rural	Chicago
The Farmer and Fruit Grower	Anna
Farmers' Review	Chicago
Turf, Field and Farm	New York City
Bradstreet's Review	New York City
Country Gentleman	Albany, N. Y.
Indiana Farmer	Indianapolis, Ind
Kentucky Live Stock Record	Lexington, Ky
Mason City Journal	Mason City
American Engineer	Chicago
Ohio Farmer	Cleaveland, O
Drainage and Farm Journal	Indianapolis, Ind
United States Miller	Milwaukee, Wis
Paris Beacon	Paris
Home Farm	Louisville, Ky
Farm, Home and Herd	Indianapolis, Ind
The Drovers' Journal	Chicago
Cincinnati Price Current	Cincinnati, O
Gazette	Jonesboro
Gazette	Lanark
Breeders' Gazette	Chicago
Industrial World	Chicago
Journal of Commerce	Chicago
Iowa Homestead	Des Moines, Ia
Freeport Journal	Freeport
Albion Journal	Albion
White Hall Republican	Whitehall
Indiana Farmer	Indianapolis, Ind
Legal Adviser	Chicago
Breeders' Journal	Beecher

REPORT OF COMMITTEE ON TRANSPORTATION.

To the State Board of Agriculture.

The majority of the railroads of the State granted the usual excursion and reduced freight rates to exhibitors and visitors attending the State Fair and Fat Stock Shows of 1882.

It is recommended that the Secretary be instructed to communicate to the following railroads, the thanks of the people for the material assistance rendered the industrial classes by reducing the passenger and freight rates to exhibiters and visitors.

Respectfully submitted,

JAMES R. SCOTT,
D. B. GILLHAM,
D. W. VITTUM, Jr.,
S. D. FISHER.

Railroad Arrangements, State Fair 1882.

Chicago, Pekin & Southwestern Illinois Midland	Passengers, one and one-fifth fare for the round trip. Freight will be charged full rate to the Fair, and returned free to points whence shipped, on certificate of the Secretary that the same has been on exhibition, and has not changed ownership.
Chicago and Alton Illinois Central Chicago, Burlington & Quincy Chicago, Rock Island & Pacific Wabash, St. Louis & Pacific Peoria, Decatur & Evansville Rock Island & Peoria Jacksonville Southeastern	Passengers, one and one-third fare for the round trip. Freight will be charged full rate to the Fair, and must be prepaid, when it will be returned free to points whence shipped, on certificate of the Secretary that the same has been on exhibition, and has not changed ownership.

RAILROAD ARRANGEMENTS—*Continued.*

Chicago & Northwestern	Passengers, one and one-third fare for the round trip. Freight must be prepaid at full rate to the Fair, and will be returned free to points on this road whence shipped, on certificate of the Secretary that the same has been on exhibition, and has not changed ownership.
Ohio & Mississippi	Passengers, at one and one-third rates for the round trip from points on Springfield division, and main line between Lawrenceville and Flora. Freight will be charged full rates to the Fair and returned free to points whence shipped, on certificate of the Secretary that the same has been on exhibition, and has not changed ownership.
Vandalia Line	Freight will pay full rates going and be returned free, on certificate of the Secretary that the same has been on exhibition, and has not changed ownership.
Indiana, Bloomington & Western	Passengers 4 cents per mile one way for the round trip. Freight must be prepaid at tariff rates at the point of shipment to the Fair, and will be returned free to point whence shipped, on certificate of the Secretary that the same has been on exhibition, ownership unchanged.
Indianapolis & St. Louis	Freight from any station in Illinois at full tariff rates, and returned to points of shipment free on certificate of the Secretary that the same has been on exhibition, and has not changed ownership.

Arrangements to cover only points in Illinois.

As nearly all the Railroads require pre-payment of Freight at the station whence shipped, a receipted bill should be taken for the same, which should be CERTIFIED BY THE SECRETARY, ON THE GROUNDS, as early as Thursday of the Fair.

EXPRESS ARRANGEMENTS.

The UNITED STATES EXPRESS CO. and the AMERICAN EXPRESS CO. will each have an office on the Fair Grounds, and will receive and deliver there all matter sent or received by Express, without extra charge.

RAILROAD ARRANGEMENTS FOR THE CHICAGO FAT STOCK SHOW, 1882.

Michigan Central	Will carry stock to Chicago at local rates, and refund one-third of the amount paid on presentation of Secretary's certificate that the stock has been on exhibition.
*Lake Shore & Michigan Southern	
Chicago & Northwestern	Will carry stock to Chicago at regular tariff rates, and refund one-third of the amount paid on presentation of Secretary's certificate that the stock has been on exhibition.
Chicago, Rock Island & Pacific	
Illinois Central	
Chicago & Alton	
Chicago, Burlington & Quincy	
Chicago & Iowa	
Chicago, Pekin & Southwestern	
Chicago & Eastern Illinois	
Wabash, St. Louis & Pacific	

* Arrangements to apply to Stock shipped in car-loads, or in lots of four animals or more; the revenue of the road in no case to be made less than $12 for 100 miles or less; $15 for distances between 100 and 200 miles, and $20 for distances between 200 and 300 miles.

Paid freight bills with Secretary's certificate should be presented to the railroads when applying for a rebate of freight.

These concessions are made upon the condition that the roads are released from any and all liability exceeding $50 per head, in case of injury by accident or otherwise, while in transit, or while awaiting shipment or delivery at stations.

Stock over the Illinois Central Railroad will be delivered at the Exposition Building, and should be so billed.

Stock from all other roads should be shipped to the Exposition Building, care Illinois Central Railroad Union Stock yards. The charge per car stock from the Stock Yards to the Exposition Building, and returning same, or empty car, to Stock Yards, will be five dollars.

Owners, or their agents, must accompany the stock and be responsible for it, and its loading and unloading. All stock should be billed prepaid. The five dollars switching charges will be collected of the owner of the stock at the Exposition Building.

REPORT OF COMMITTEE ON MUSEUM.

To the State Board of Agriculture:

The committee present the following list of additions to the Museum of the Department of Agriculture during the past year.

The Museum is far from complete as representing the agricultural products of this State, and special efforts should be made by this Board to enlarge the collection and make the same creditable to this, the leading agricultural State in the Union.

The retiring committee will make some suggestions to the new Board in reference to the enlargement and usefulness of the Agricultural Museum as an advertisement of the agricultural resources of the State.

Respectfully submitted,

JAMES R. SCOTT,
D. B. GILLHAM,
S. D. FISHER.

LIST OF ADDITIONS TO AGRICULTURAL MUSEUM DURING THE YEAR 1881.

Name.	Collector.	Locality.
Eggs.		
Mallard	J. W. Velie	Chicago
Florida Gallinule	"	"
Trumpeter Swan	"	"
Wild Goose—Canada Goose	"	"
Carolina Rail—Sora—Ortolan	"	"
Black Rail	"	"
Virginia Rail	"	"
Corn Crake	"	"
Coot	"	"
Bartramian Sandpiper—Upland Plover	"	"
Wilson's Plover	"	"
Semipalmated Plover—Ringneck	"	"
Kildeer—Plover	"	"
Long-billed Curlew	"	"
American Woodcock	"	"
American Snipe—Wilson's Snipe	"	"
Semipalmated Tattler—Willet	"	"
Spotted Sandpiper	"	"
Oyster Catcher	"	"
Wilson's Phalarope	"	"
White Ibis	"	"
Wood Ibis	"	"
Roseate Spoonbill	"	"
Green Heron	"	"
Night Heron	"	"
Purple Grackle—Crow Blackbird	"	"
Florida Grackle	"	"
Rusty Grackle	"	"
Blue-headed Grackle	"	"
Orchard Oriole	"	"
Baltimore Oriole	"	"
Bullock's Oriole	"	"
Western Field Lark	"	"
Fieldlark—Meadowlark	"	"
Horned Lark—Shore Lark	"	"
Yellow-headed Blackbird	"	"
Red-winged Blackbird	"	"
Red-shouldered Blackbird	"	"
Cowbird	"	"
Bobolink—Reedbird—Ricebird	"	"
Cardinal Redbird	"	"
Black-headed Grosbeak	"	"
Rose-breasted Grosbeak	"	"
Black-throated Bunting	"	"
Towhee Bunting—Chewink	"	"
Bay-winged Bunting—Grass Finch	"	"
Lark Finch	"	"
Purple Finch	"	"
Chipping Sparrow	"	"
Song Sparrow	"	"
Field Sparrow	"	"
Swamp Sparrow	"	"
Henslow's Sparrow	"	"

Agricultural Museum—*Continued.*

Name.	Collector.	Locality.
Yellow-winged Sparrow	J. W. Velie	Chicago
Savanna Sparrow	"	"
Carolina Titmouse	"	"
Black-capped Chickadee	"	"
Brown Creeper	"	"
Little Blue Heron	"	"
Great Blue Heron	"	"
Florida Heron	"	"
Great White Heron	"	"
Louisiana Heron	"	"
Least Bittern	"	"
Bittern—Indian Hen	"	"
Little White Egret	"	"
Great White Egret	"	"
Reddish Egret	"	"
White Crane—Whooping Crane	"	"
Brown Crane—Sandhill Crane	"	"
Virginia Patridge—Quail—Bob White	"	"
Californian Partridge	"	"
Blue Partridge	"	"
Massena Partridge	"	"
Common Sharp-tailed Grouse	"	"
Pinnated Grouse—Prairie Hen	"	"
Ruffled Grouse—Partridge—Pheasant	"	"
Florida Jay	"	"
Blue Jay	"	"
Wild Pigeon	"	"
Carolina Dove	"	"
Common Wild Turkey	"	"
Common Crow	"	"
Fish Crow	"	"
American Magpie	"	"
Boat-tailed Grackle—Jackdaw	"	"
House Wren	"	"
Short-billed Marsh Wren	"	"
Long-billed Marsh Wren	"	"
Great Carolina Wren	"	"
Brown Thrush—Thrasher	"	"
Golden Crowned Thrush	"	"
Wilson's Thrush—Veery	"	"
Hermit Thrush	"	"
Wood Thrush	"	"
Mocking-bird	"	"
White-eyed Vireo	"	"
Warbling Vireo	"	"
Red-eyed Vireo	"	"
White-rumped Shrike	"	"
Cedar Bird—Cherry Bird	"	"
Purple Martin	"	"
Bank Swallow—Sand Martin	"	"
White Bellied Swallow	"	"
Cliff Swallow—Eave Swallow	"	"
Barn Swallow	"	"
Summer Red-Bird	"	"
Scarlet Tanager	"	"
Summer Warbler	"	"
Black-and-Yellow Warbler	"	"
Chestnut-sided Warbler	"	"
Maryland Yellow-throat	"	"
Eastern Bluebird	"	"
Western Bluebird	"	"
Robin	"	"
Least Flycatcher	"	"
Arkansas Flycatcher	"	"
Swallow-tailed Flycatcher	"	"
Traill's Flycatcher	"	"
Belted Kingfisher	"	"
Kingbird—Bee Martin	"	"
Gray Kingbird	"	"
Nighthawk	"	"
Whippoorwill—Nightjar	"	"
Chimney Swift	"	"
Ruby-throated Hummingbird	"	"
Red-shafted Woodpecker	"	"
Golden-winged Woodpecker—Flicker	"	"
Lewis' Woodpecker	"	"
Red-headed Woodpecker	"	"
Red-bellied Woodpecker	"	"

Agricultural Museum—*Continued.*

Name.	Collector.	Locality.
Pileated Woodpecker—Logcock	J. W. Velie	Chicago
Downy Woodpecker	"	"
Black-billed Cuckoo	"	"
Yellow-billed Cuckoo	"	"
Snowy Owl	"	"
Burrowing Owl	"	"
Barred Owl	"	"
Short-eared Owl	"	"
Long-eared Owl	"	"
Screech Owl—Mottled Owl	"	"
Great Horned Owl	"	"
Barn Owl	"	"
Fish Hawk—Osprey	"	"
White-headed Eagle—Bald Eagle	"	"
Marsh Hawk—Harrier	"	"
Swallow-tailed Hawk	"	"
Sharp-shinned Hawk—Pigeon Hawk	"	"
Red-shouldered Hawk	"	"
Cooper's Hawk	"	"
Sparrow Hawk	"	"
Rough-legged Buzzard	"	"
Broad-winged Buzzard	"	"
Western Red-tailed Buzzard	"	"
Red-tailed Buzzard—Hen Hawk	"	"
Turkey Buzzard	"	"
Redstart	"	"
Catbird	"	"
Blue-gray Gnatcatcher	"	"
Ostrich	"	"
Common Guillemot—Murre	"	"
Foolish Guillemot	"	"
Black Guillemot—Sea Pigeon	"	"
Razor-billed Auk	"	"
Red-billed Dabchick	"	"
Horned Grebe	"	"
Crested Grebe	"	"
Red-necked Grebe	"	"
Red-throated Diver	"	"
Black-throated Diver	"	"
Loon—Great Northern Diver	"	"
Black Skimmer	"	"
Noddy Tern	"	"
Black Tern	"	"
Least Tern	"	"
Roseate Tern	"	"
Forster's Tern	"	"
Arctic Tern	"	"
Common Tern—Sea Swallow	"	"
Sooty Tern	"	"
Cabot's Tern	"	"
Royal Tern	"	"
Gull-billed Tern—Marsh Tern	"	"
Kittiwake Gull	"	"
Bonaparte's Gull	"	"
Laughing Gull	"	"
Ring-billed Gull	"	"
Herring Gull—Common Gull	"	"
Great Black-backed Gull	"	"
Skua Gull	"	"
Stormy Petrel—Mother Carey's Chicken	"	"
Leach's Petrel	"	"
Anhinga—Darter	"	"
Mexican Cormorant	"	"
Florida Cormorant	"	"
Double-crested Cormorant	"	"
Pallas' Cormorant	"	"
Man of War Bird	"	"
Gannet—Solan Goose	"	"
Brown Pelican	"	"
White Pelican	"	"
Hooded Merganser	"	"
Red-breasted Merganser	"	"
Mergensor—Goosaner	"	"
Eider Duck	"	"
Dusky Duck	"	"
Summer Duck—Wood Duck	"	"
Greater Blackhead	"	"
American Widgeon—Baldpate	"	"

Agricultural Museum—*Continued.*

Name.	Collector.	Locality.
Shoveler	J. W. Velie	Chicago
Blue-winged Teal	"	"
Green-winged Teal	"	"
Pinitail—Sprigtail	"	"
Nests.		
Yellow-headed Blackbird	"	"
Red-winged Blackbird	"	"
Purple Grackle—Crow Blackbird	"	"
Song Sparrow	"	"
Field Sparrow	"	"
Kingbird—Bee Martin	"	"
Pewee—Pewit—Phoebe	"	"
Wood Pewee	"	"
Traill's Flycatcher	"	"
Eastern Bluebird	"	"
Chestnut-sided Warbler	"	"
Summer Warbler	"	"
Redstart	"	"
Cliff Swallow—Eave Swallow	"	"
White-rumped Shrike	"	"
Red-eyed Vireo	"	"
Warbling Vireo	"	"
Catbird	"	"
Brown Thrush—Thrasher	"	"
Long-billed Marsh Wren	"	"
House Wren	"	"
Horned Lark—Shore Lark	"	"
Blue-gray Gnatcatcher	"	"
Lark Finch	"	"
American Goldfinch—Yellow Bird	"	"
Orchard Oriole	"	"
Towhee Bunting—Chewink	"	"
	Contributor.	
Florida Beans	Frank White	Live Oak, Florida
Couch Peas	" "	" "
White Clawson Wheat	John Bowen	McHenry county.
Sorghum Sugar	Sugar Works	Champaign co.

Motion Mr. Haskell carried,

That a committee of three be appointed to consider the recommendations on miscellaneous entries made by committees at the late Fair.

President appointed as said committee:

Messrs. Haskell, Beaty and Washburn.

The committee appointed to prepare blank for cost of production required of exhibiters at the Fat Stock Show, in rings for cost of production, made the following report, which was,

On motion of Mr. Gore, adopted:

REPORT.

To the Illinois State Board of Agriculture:

Your committee to whom was referred the matter of preparing a form to be filled by parties competing for premiums offered in the "cost of production" rings, would beg leave to recommend the accompanying form.

The object of the Board, as understood by the committee, in offering premiums for cost of production, is to ascertain the most economical methods of breeding stock as practiced by the most successful stockmen.

The value of food at the place of feeding should not, in the opinion of the committee, be considered in making the award, but this information will serve a valuable purpose in determining an equitable standard of prices, upon which basis the value of all the articles of food named in the several statements of competitors may be computed.

Respectfully submitted,

D. B. GILLHAM,
D. E. BEATY,
JOHN P. REYNOLDS.

COST OF PRODUCTION.

FORM OF APPLICATION FOR ENTRY.

Secretary State Board of Agriculture:

I hereby make application to enter the following described animal, in Lot 14—Cost of Production—and give items of cost and other particulars below:

Name.. P. O...

PEDIGREE.

Name..
Herd Book No.... Color, etc...............
Date of birth...... ....
Bred by....................of........................

Got by.................
1 dam................ " ....
2 dam........ .... " ....
3 dam............ ... " ....

COST OF PRODUCTION—FIRST YEAR.

Value of calf at birth......	$ ..
Quantity and value of milk consumed. No. galls. ...... Price per gal..	....
*Quantity and value of grain, meal and feed of each kind other than hay, forage and pasturage consumed during the first twelve months, as follows:	
........lbs. of....... @....... per 100 lbs.	....
.... " ....@........ "	....
.... " .... @ .... "	....
.... " ....@........	....
†Quantity, kind and value of hay and other forage (except pasture) consumed first twelve months, as follows:	
........lbs. of....... @........per 100 lbs.	....
.... " ....@........ "	....
.... " .... @........ "	....
.... " ....@........	....
‡Value grass consumed in pastures up to 12 months of age.........................	....
Expense for care, feeding, salting, etc., up to 12 months of age.	....
§Other expenses for food, etc., up to 12 months of age, not named above, as follows:	
..............................!..............	....
Total cost of production up to 12 months of age	....

Weight of animal at 12 months of age....lbs.
Value of animal at 12 months of age, $......
What kinds and how much other food than milk and pasturage was given to the calf daily while sucking?.........................
At what age was the calf weaned?...........
Was the calf allowed to run with dam until weaned?............
Is a daily allowance of grain for yearling steers, when on grass, profitable?.........

COST OF PRODUCTION—SECOND YEAR.

ANIMAL ONE AND UNDER TWO YEARS OLD.

Weight of animal at 12 months of age....lbs.

Value of animal at 12 months of age...	$ ..
*Quantity, kind and value of grain, meal and feed of each kind other than hay, forage and pasture consumed from 12 months of age to November 13, 1883, as follows:	
........lbs. of... ....@....... per 100 lbs.	...
.... " .... @........ "	...
.... " .... @........ "	...
.... " ....@........	....
*Quantity, kind and value of grain, meal and feed of each kind other than hay, forage and pasture consumed from 12 months of age up to 24 months of age, as follows:	
........lbs. of..... . @........per 100 lbs.	...
.... " ....@........ "	...
.... " ....@........	...
†Quantity, kind and value of hay and other forage, except pasture, consumed from 12 months of age up to November 13, 1883, as follows:	
........lbs. of........@ ....per 100 lbs.	...
.... " .... @........ "	....
.... " ....@........	...
†Quantity, kind and value of hay and other forage, except pasture, consumed from 12 months of age up to 24 months of age, as follows:	
........lbs. of....... @........per 100 lbs.	....
.... " ....@........ "	...
.... " ....@........	....
‡Value of grass consumed in pasture from 12 months of age to November 13, 1883	....
‡Value of grass consumed in pasture from 12 months of age to 24 months of age..	....
Expense for care, feeding, salting, etc.. from 12 months of age to November 13, 1883	....
Expense for care, feeding, salting, etc., from 12 months of age to 24 months of age.......	
‡Other expenses for food, etc., not named above, from 12 months of age to November 13, 1883, as follows:	
....	....

Form of Application for Entry—*Continued.*

§Other expenses for food, etc., not named above, from 12 months of age up to 24 months of age, as follows:

....

Total cost of production from 12 months of age to November 13, 1883 ....
Total cost of production from 12 months of age up to 24 months of age............ ....
Weight of animal Nov. 13, 1883 ...... lbs.
Weight of animal at 24 months.. ...lbs.
Value of animal Nov. 13, 1883, $6 per 100.
Value of animal at 24 months, $6 per 100.

REMARK

Was the animal stabled or sheltered during the winter? ....
Was the animal allowed range of pasture during the winter? ....
Daily allowance of grain? ....

COST OF PRODUCTION—THIRD YEAR.

ANIMAL TWO AND UNDER THREE YEARS OF AGE.

Weight of animal at 24 months of age... lbs
Value of animal at 24 months of age.... $...

*Quantity, kind and value of grain, meal and feed of each kind other than hay, forage and pasture, consumed from 24 months of age to November 13, 1883, as follows:

........lbs. of....... @ ....per 100 lbs. ....
.... " ....@........ " ....
.... " ....@........ " ....

*Quantity, kind and value of grain, meal and feed of each kind other than hay, forage and pasture, consumed from 24 months of age up to 36 months of age:

........lbs. of........@ ....per 100 lbs. ....
.... " ....@........ " ....
.... " ....@........ " ....

†Quantity, kind and value of hay and other forage, except pasture, consumed from 24 months of age up to November 13, 1883, as follows:

........lbs. of ....@........per 100 lbs. ....
.... " ....@ .... " ....
.... " ... .@........ " ....

†Quantity, kind and value of hay and other forage, except pasture, consumed from 24 months of age up to 36 months of age:

........lbs. of........@........per 100 lbs. ....
.... " ....@........ " ....
.... " ....@........ " ....

‡Value of grass consumed in pasture, from 24 months of age to November 13, 1883....... ....
‡Value of grass consumed in pasture, from 24 months of age up to 36 months of age ....
Expense for care, feeding, salting, etc., from 24 months of age to November 13, 1883 ....
Expense for care, feeding, salting, etc., from 24 months of age up to 36 months of age.... ....
§Other expenses not named above from 24 months of age to November 13, 1883, as follows:

....

§Other expenses not named above, from 24 months of age to 36 months of age, as follows:

....

Total cost of production, from 24 mos. of age to November 13, 1883 ....
Total cost of production from 24 mos. of age up to 36 months of age.......... ....
Weight of animal Nov. 13, 1883 ....
Weight of animal 36 mos. of age ....
Value of animal Nov. 13, 1883....... $....
Value of animal 36 mos. of age..........

REMARKS.

Was the animal stabled or sheltered during winter? ....
Was the animal allowed range of pasture during winter? ....
Daily allowance of grain? ....

COST OF PRODUCTION FOR PART OF FOURTH YEAR.

ANIMAL THREE AND UNDER FOUR YEARS.

Weight of animal at 36 months of age, lbs ....
Value of animal at 36 months of age, at $6 per 100 ....

*Quantity, kind and value of grain, meal and feed of each kind other than hay, forage and pasture, consumed from 36 months of age to November 13, 1883, as follows:

........lbs. of....... @ ....per 100 lbs.
.. ... " ....@........ "
... . " ... .@........ "

*Quantity and value of hay and other forage (except pasture) consumed, from 36 months of age to November 13 1883:

........lbs. of....... @ ....per 100 lbs. ....
... . " .... @........ " ....
.... " ... .@........ " ....

§Value of grass consumed in pasture, from 36 months of age to November 13, 1883 ....
Expense for care, feeding, salting, etc., from 36 months of age to November 13, 1883 ....
§Other expenses not named above, from 36 months of age to November 13, 1883, as follows:

....

Total cost of production from 36 mos. of age to November 13, 1883............ ....
Weight of animal Nov. 13, 1883, lbs...... ...
Value of animal Nov. 13, 1883......$......

REMARKS.

Was the animal stabled or sheltered during winter? ....
Was the animal allowed range of pasture during winter? ....
Daily allowance of grain?

RECAPITULATION.

Cost of production—
At 12 months of age ....
November 13, 1883, (steer 1 and under 2). $...
At 24 months of age ....
November 13, 1883, (steer 2 and under 3) ....
At 36 months of age ....
November 13, 1883, (steer 3 and under 4) ....

Total.......................................$...

On this ...... day of November, 1883, personally appeared before me ...., who being duly sworn, says that the above statement is true.

[SEAL] .... N. P.

*State, separately, amount of corn, oats, linseed or other meal, grain or roots, etc.; whether ground, steamed or otherwise specially prepared; price of each per 100 pounds.

†State, separately, amount of timothy, clover, millet, prairie or other hay, and price of each per ton; also whether cut or otherwise specially prepared.

‡State kind of pasture—blue grass, timothy, clover or otherwise.

§Specify kind, amount and value of each of the several kinds of food.

Motion Mr. Washburn carried,

That the recommendations contained in the reports of standing committees and Superintendents of Departments relating to the future work of the Board be referred to the incoming Board.

The following reports of Superintendents of Departments were read and ordered on file:

CLASS A—CATTLE.

REPORT OF D. B. GILLHAM, *Acting Superintendent.*

To the State Board of Agriculture:

The exhibit of cattle at the late State Fair was most creditable to the management and the cattle interests of the country.

The number of head of Shorthorn cattle exhibited exceeded that of the previous year, and the quality, if possible, was better.

The exhibit of Herefords, in point of number and excellence, has never been approached at any Fair in this country.

The dairy breeds were strongly represented in number and quality.

The extent of the cattle exhibit in comparison with previous years is shown in the following table, which gives number of entries of each breed the past ten years:

Year.	Shorthorn....	Hereford	Devon	Polled Angus...	Holstein.......	Jersey	Ayrshire	Total ....
1873	133	18	......	......	......	14	22	187
1874	135	20	11	......	27	27	28	248
1875	112	25	......	......	17	15	6	155
1876	95	23	8	......	19	33	3	181
1877	100	63	69	......	65	110	51	458
1878	111	47	33	......	57	63	53	364
1879	49	44	39	......	69	215	118	534
1880	39	43	47	16	44	57	68	314
1881	58	53	60	34	36	109	93	443
1882	63	74	26	......	31	97	78	369
Total	895	410	293	50	365	740	520	3,273
Average	89	41	36	25	40	74	52	327

It will be seen that, in the average number of entries during the past ten years, the Shorthorns take the lead with 89 entries, followed by Jerseys with 74, Ayrshires 52, Herefords 41, Holsteins 40, Devons 36, and Polled Angus 25 entries.

All the above named breeds were represented at the late Fair except the Polled Aberdeen or Angus.

The Polled cattle, although exhibited but twice at the Illinois State Fair, have made many friends, who were disappointed in not seeing their favorites at the late Fair.

The show of Fat Steers was limited as to number, but excellent in quality and attracted much attention.

It is believed that the premiums offered in the rings for Fat Steers will in due time attract a larger number of exhibiters, and increase the attendance of feeders and grazers at our fairs.

Hon. LaFayette Funk rendered most acceptable service, as Assistant Superintendent in this department, to exhibiters, visitors and the Board.

Entries, Offerings and Awards, Fair, 1882.

Lot	Breed, etc.	Number of Entries. 4 years old or over	3 years old or over	3 years old and under 4	2 years old and under 3	1 year old and under 2	Under 1 year old	Total number entries	Amount premiums offered	Amount premiums paid
1	Shorthorn bulls		4		2	3	3	12	$135	$135
1	" cows and heifers	7		1	5	8	6	27	175	160
2	" herd—bull, cow and 3 heifers							4	50	50
3	" sweepstakes—bulls							8	50	50
3	" " —females							12	50	50
	Total	7	4	1	7	11	9	63	$460	$445
4	Hereford bulls		3		4	4	6	17	135	135
4	" cows and heifers	5		4	6	12	10	37	175	175
5	" herd—bull, cow and 3 heifers							4	50	50
6	" sweepstakes—bulls							9	50	50
6	" " —females							7	50	50
	Total	5	3	4	10	16	16	74	$460	$460
7	Devon bulls		1		1		1	3	135	165
7	" cows and heifers	5		2	2	3	3	15	175	175
8	" herd—bull, cow and 3 heifers							2	50	50
9	" sweepstakes—bulls							2	50	50
9	" " —females							4	50	50
	Total	5	1	2	3	3	4	26	$460	$390
10	Polled Angus bulls								135	
10	" cows and heifers								175	
11	" herd—bull, cow and 3 heifers								50	
12	" sweepstakes—bulls								50	
12	" " —females								50	
	Total								$460	
13	Holstein bulls		2		1	1	2	6	135	110
13	" cows and heifers	5		3	2	3	4	17	175	175
14	" herd bull, cow and 3 heifers							2	50	50
15	" sweepstakes—bulls							2	50	50
15	" " —females							4	50	50
	Total	5	2	3	3	4	6	31	$460	$435
16	Jersey bulls		1		3	4	10	18	135	120
16	" cows and heifers	14		5	8	12	10	49	175	175
17	" herd—bull, cow and 3 heifers							3	50	50
18	" sweepstakes—bulls							11	50	50
18	" " —females							16	50	50
	Total	14	1	5	11	16	20	97	$460	$445
19	Ayrshire bulls		5		1	6	5	17	135	120
19	" cows and heifers	15		5	5	8	7	40	175	175
20	" herd—bull, cow and 3 heifers							4	50	50
21	" sweepstakes—bulls							5	50	50
21	" " —females							12	50	50
	Total	15	5	5	6	*14	12	78	$460	$445
22	Grand sweepstakes, beef breeds, herd—bull, cow and 3 heifers							9	500	500
23	Grand sweepstakes, milk breeds, herd—bull, cow and 3 heifers							11	500	500
24	Fat steer or spayed heifer			1	1	1		3	120	75
	Grand total	51	16	21	41	65	67	392	$4,340	$3,695

Respectfully submitted.

D. B. GILLHAM,
Superintendent pro tem. for
WM. M. SMITH, *Superintendent.*

CLASS B—HORSES.

REPORT OF D. E. BEATY, *Superintendent.*

To the State Board of Agriculture:

The exhibit of horses was much larger than last season, and the quality has never been surpassed at any former exhibition.

The show in the roadster rings was especially attractive, and included many animals of national reputation.

There was a falling off in the number of French draft, and horses for agricultural purposes, as compared with the preceding show.

The same difficulty was experienced in making a well-defined line of difference between the roadster and gentleman's driving horses as heretofore, and many of the latter were improperly shown as roadsters, and lost premiums they would have received had they been entered in the rings as gentlemen's driving horses.

The following recommendations, made at the last annual meeting, are again brought to the attention of the Board.

The trotting horse has assumed so distinct a type, of late years, and is bred so largely for track purposes, that, in the opinion of your superintendent, the time has arrived when this class should be separated from the roadster and gentlemen's driver, so that the trotter shall be judged for trotting purposes the roadster for the points that go to make up a practical road horse, and the gentlemen's driver for the fine size, high style and rapid movement that makes him so attractive.

There is a profitable market for each of these distinct classes, and the interest of horse raisers will be advanced by not confounding them together.

The following table gives the number of entries, amount of premiums offered and paid the several classes of horses.

Entries, Offerings and Awards, Fair 1882.

Breed, Etc.	Number of Entries.									
	4 years old or over........	3 years old and under 4....	2 years old and under 3....	1 year old and under 2.....	Under 1 year old	Brood mare with 2 colts.	Stallion with 5 sucking foals	Total........	Amount premiums offered	Amount premiums paid ....
Thoroughbred stallions........................	5	1	1	2	1	....	...	10	$200	$120
" mares................................	2	1	1	....	...	1	...	5	180	110
" sweepstakes—stallions.......	....	...	....	....	...	....	...	7	100	100
" " mares	....	....	...	...	..	....	...	4	50	50
Total...	7	2	2	2	1	1	....	26	$530	$380
Roadster stallions..........................	22	7	22	17	16	...	1	85	200	200
" mares..................................	24	9	9	7	8	4	....	61	180	180
" sweepstakes—stallions	....	....	....	....	...	....	...	26	100	180
" " mares	....	...	...	....	....	....	...	27	50	50
Total	46	16	31	24	24	4	1	199	$530	$530
French draft stallions	10	5	3	3	1	...	....	22	200	140
" mares	3	2	1	3	1	1	....	11	180	160
" sweepstakes—stallions	....	....	....	....	....	....	....	12	100	100
" " mares	....	....	....	...	....	....	....	7	50	50
Total..	13	7	4	6	2	1	....	52	$530	$450
English draft stallions.........................	17	14	13	7	2	...	....	53	200	150
" mares................................	12	8	6	4	4	2	....	36	180	180
" sweepstakes—stallions........	....	....	....	....	....	....	....	32	100	100
" " mares..............	....	...	....	....	....	....	....	15	50	50
Total..	29	22	19	11	6	2	....	136	$530	$480

Entries, Offerings and Awards—Continued.

Lot	Breed, Etc.	NUMBER OF ENTRIES.								Amount premiums offered	Amount premiums paid
		4 years old or over	3 years old and under 4	2 years old and under 3	1 year old and under 2	Under 1 year old	Brood mare with 2 colts	Stallion with 5 sucking foals	Total		
33	Horses for agricultural purposes—stallions	20	2	8	1	4	....	2	37	$200	$190
33	" " " mares	5	3	3	3	7	3	...	24	180	180
34	Horses for agricultural purposes sweepstakes—stallions	....	...	....	....	....	....	....	28	100	100
34	Horses for agricultural purposes sweepstakes—mares	...	....	..	...	...	. .	....	14	50	50
	Total	25	5	11	4	11	3	2	103	$530	$520
35	Saddle stallions	2	...	1	...	....	....	....	3	90	50
35	" mares	2	1	1	...	...	....	...	4	90	70
35	" geldings	6	2	..	..	....	...	...	8	90	60
	Total	10	3	2	..	..	....	....	15	$270	$180
36	Carriage team	...	....	...	...	....	...	....	15	60	60
36	Family mare or gelding	...	..	...	..	...	....	....	28	30	30
	Total	....	....	....	....	..	....	...	43	$90	$90
37	Gentlemen's driving horses—										
37	Pair of mares	....	....	...	...	...	...	....	7	60	60
37	Pair of geldings	....	....	...	....	...	....	...	9	60	60
37	Single stallion	....	....	...	...	...	...	....	21	60	60
37	Single mare	....	....	...	...	....	....	....	24	45	45
37	Single gelding	...	....	...	..	..	..	...	24	45	45
	Total	....	...	...	...	....	....	....	85	$270	$270
38	Jacks	2	....	....	1	1	...	....	4	155	65
38	Jennets	...	2	....	1	...	....	....	3	115	55
38	Mules	....	2	..	1	4	...	....	7	90	55
39	Sweepstakes—Jack with 3 mules	....	....	...	..	...	...	...	1	50	50
39	" Jennet with 2 colts	....	....	...	...	...	....	....	1	25	25
39	" mule team 3 y'rs old or over	....	....	...	...	...	...	..	1	40	25
	Total	2	4	...	3	5	....	...	17	$475	$275
40	Equestrianism—boys' riding	....	....	...	..	...	....	....	8	21	21
	Grand total	132	59	69	50	49	11	3	684	$3,776	$3,196

Respectfully submitted.

D. E. BEATY,
Superintendent Class B—Horses.

CLASS C—SHEEP.

REPORT OF E. B. DAVID, *Superintendent.*

To the State Board of Agriculture:

In this department the number and quality has never been excelled, and its continuance will, I trust, keep up the reputation that has been developed by the breeders of Illinois and surrounding States. Some of the animals were especially imported this season to exhibit at this Fair, and the exhibiters may well feel proud of the Show.

The number of entries last year was 348, while this year they amounted to 431—almost one-third more than last year. Kentucky, Canada, Michigan, Ohio and other States make up, with Illinois, this large exhibit.

This year occurred the same trouble as last year, in relation to the committeemen; only about ten out of sixty-five appointed came to time, and I would repeat one paragraph of my last year's report. Compliance with the request of the State Wool-Growers' Association for a change in the manner of judging sheep, and the employment of one "expert" judge in lieu of the number now required for placing awards, suggests a remedy for so many of the inconveniences that attach to the custom heretofore observed, that I heartily commend it to your favorable consideration.

The following figures give the number of entries, and amount of premiums paid as well as offered:

Entries, offerings and awards Fair 1882.

Lot.	Breed, etc.	No. of entries.			Total number entries.	Amount premiums offered.	Amount premiums paid.
		2 years old or over.	1 year old and under 2.	Under 1 year old.			
41	Cotswold rams	9	17	11	37	$70	$70
41	" ewes	18	14	11	43	70	70
42	" sweepstakes—rams	....	....	....	14	20	20
42	" " —ewes	....	....	....	16	15	15
42	" " —ram and 5 ewes	...	....	....	4	20	20
42	" " —ram with 5 of his get	....	....	...	5	20	20
	Total	27	31	22	119	$215	$215
43	Leicester, etc., rams	5	4	3	12	70	70
43	" ewes	5	6	4	15	70	70
44	" sweepstakes—rams	....	....	....	3	20	20
44	" " —ewes	....	....	....	3	15	15
44	" " —ram and 5 ewes	....	...	....	3	20	20
44	" " —ram with 5 of his get	....	....	...	2	20	20
	Total	10	10	7	38	$215	$215
45	Southdown rams	5	5	2	12	70	70
45	" ewes	5	5	4	14	70	70
46	" sweepstakes—rams	....	....	...	6	20	20
46	" " —ewes	....	....	....	7	15	15
46	" " —ram and 5 ewes	....	....	....	1	20	20
46	" " —ram with 5 of his get	....	....	...	1	20	20
	Total	10	10	6	41	$215	$215
47	Shropshiredown, etc., rams	4	9	11	24	70	70
47	" ewes	9	13	10	32	70	70
48	" sweepstakes—rams	....	....	....	12	20	20
48	" " —ewes	....	....	....	17	15	15
48	" " —ram and 5 ewes	....	....	....	2	20	20
48	" " —ram with 5 of his get	....	....	....	2	20	20
	Total	13	22	21	89	$215	$215

Number of Entries, etc., of Sheep—Continued.

Lot	Breed, etc.	No. of entries. 2 years old or over	No. of entries. 1 year old and under 2	No. of entries. Under 1 year old	Total number entries.	Amount premiums offered	Amount premiums paid
49	American Merino rams	14	17	11	42	$70	$70
49	" " ewes	18	13	18	49	70	70
50	" " sweepstakes—rams				14	20	20
50	" " " —ewes				16	15	15
50	" " " —ram and 5 ewes				8	20	20
50	" " " —ram with 5 of his get				6	20	20
	Total	32	30	29	135	$215	$215
51	French Merino, etc., rams					70	
51	" " ewes					70	
52	" " sweepstakes—rams					20	
52	" " " —ewes					15	
52	" " " —ram and 5 ewes					20	
52	" " " —ram with 5 of his get					20	
	Total					$215	
53	Long Wool—12 months' fleece from sheep over 2 years old					5	
53	" " —fleece from sheep under 2 years old				4	5	5
53	Middle Wool—12 months' fleece from sheep over 2 years old					5	
53	" " —fleece from sheep under 2 years old					5	
53	Fine Wool—12 months' fleece from sheep over 2 years old				8	5	5
53	" " —fleece from sheep under 2 years old				2	5	5
	Total				9	$30	$15
	Grand total	92	103	85	431	$1,320	$1,090

Respectfully submitted,

E. B. DAVID,

Supt. Class C, Sheep.

CLASS D—SWINE.

REPORT OF DAVID GORE, *Superintendent.*

To the State Board of Agriculture:

I have the honor to report to your honorable body that the exhibit in Class D—Swine, at the late fair at Peoria, was fully up to the high standard of previous fairs as to quality, but not quite so great in numbers as some former years. Your superintendent had some difficulty in procuring the services of competent judges, there not being more than one in ten of the committeemen appointed by the Board who reported for duty. It requires some time and care to get committeemen from the promiscuous crowd which we are compelled to select from on the spur of the moment. If the Board could devise some means by which competent committeemen could be induced to attend the fair and serve, it would be a source of great satisfaction to exhibiters as well as to the superintendent.

The following shows the number of entries and the awards made in the several classes:

Entries, Offerings and Awards—Fair 1882.

Lot..........	Breed, Etc.	Number of Entries.			Total number entries	Amount premiums offered............	Amount premiums paid..........
		2 years old or over.......	1 year old and under 2	Under 1 year old......			
54	Berkshire boars..	2	5	17	24	$85	$85
54	" sows...	8	8	15	31	85	85
54	" sow and pigs	....	....	....	1	30	20
54	" boar and 4 sows..	....	....	....	2	25	25
54	" boar with 5 of his get..............................	....	....	....	1	20	20
55	" sweepstakes—boars..................................	....	..	....	11	20	20
55	" " —sows	....	..	..	13	20	20
	Total..	10	13	32	83	$285	$275
56	Poland China boars	1	7	22	30	85	75
56	" sows	6	8	14	28	85	85
56	" sow and pigs..	...	...	....	8	30	30
56	" boar and 4 sows	...	....	....	2	25	25
56	" boar with 5 of his get	....	...	....	6	20	20
57	" sweepstakes—boars..................................	...	...	..	14	20	20
57	" " sows...	....	..	....	17	20	20
	Total..	7	15	36	105	$285	$275
58	Chester White and Victoria boars........................	4	2	10	16	85	85
58	" " " sows........................	5	8	8	21	85	85
58	" " " sow and pigs.	....	..	....	3	30	30
58	" " " boar and 4 sows	....	..	..	2	25	25
58	" " " boar with 5 of his get........	....	....	..	3	20	20
59	" " " sweepstakes—boars........	....	....	..	11	20	20
59	" " " " sows........	..	..	..	5	20	20
	Total..	9	10	18	61	$285	$285
60	Essex boars..	3	5	6	14	85	85
60	" sows..	5	8	10	23	85	85
60	" sow and pigs	....	....	...	4	30	30
60	" boar and 4 sows	....	...	...	4	25	25
60	" boar with 5 of his get	....	....	...	5	20	20
61	" sweepstakes—boars	....	....	...	8	20	20
61	" " sows..	....	..	..	9	20	20
	Total	8	13	16	67	$285	$285
62	Small Yorkshire and Suffolk boars....................	3	3	4	10	85	85
62	" " " sows....................	4	4	5	13	85	85
62	" " " sow and pigs....................	....	..	..	2	30	30
62	" " " boar and 4 sows....................	....	...	..	2	25	25
62	" " " boar with 5 of his get.....	....	....	.	3	20	20
63	" " " sweepstakes—boars.......	....	...	.	5	20	20
63	" " " " sows........	...	.	..	5	20	20
	Total..	7	7	9	40	$285	$285
64	Other distinct breeds—boar and 5 sows.......................	....	....	..	4	50	50
65	Grand sweepstakes herd—boar and 5 sows, same breed	....	....	..	15	75	75
	Grand total..	41	58	111	375	$1,550	$1,530

Respectfully submitted,
DAVID GORE,
Supt. Class D, Swine.

CLASS E—POULTRY.

REPORT OF H. D. EMERY, *Superintendent.*

To the State Board of Agriculture:

As Superintendent of Class E at the Fair at Peoria, I beg leave to report, that in extent and quality it was fully up to that of any for several years.

The continued absence from these shows of many of the most prominent and reliable breeders of improved poultry leaves the great bulk of the display to a few professional exhibiters, who come prepared to compete for the whole list.

Our fairs being held at the early date they are, also keeps many from showing who design to show later at the regular poultry shows of the country.

Again, at this early date spring birds are not in full plumage, and old birds not recovered from moulting.

There are other reasons why our best breeders will not show at our fairs, the most important of which is the manner of judging by committees that have to be largely picked up on the ground, and grudgingly give their hurried time to the duty.

The *proper judging of poultry* can only be done by experts, governed by a regular recognized "Standard of Excellence," and these are seldom found among those commonly attending our fairs.

Another is the poor facilities for display and protection from weather.

So long as these objections exist, little advance in the character of the Poultry Department can be expected.

In referring to the display somewhat in detail, would say: The Buff, Black, Partridge and White Cochins were well represented by many fine specimens. Light Brahmas were very poorly represented. Plymouth Rocks were more generally enquired for than any other breed, and were fairly represented. Hamburgs and Polish, in their varieties, were well represented. Games (except Bantams) were conspicuous for their absence. The Bantam list was quite full in variety, and apparently well bred.

There was a commendable display of Turkeys—excepting whites. Water fowls (Geese and Ducks) have never been out in greater force or of better specimens.

The show of pet stock—Rabbits and Pigeons—was good, and attracted much attention. The interest in this department is always shown by the crowded condition of the building.

In conclusion, I would most earnestly suggest the adoption of the "expert" judging in this department. Also, the changing of the premium list so that Fowls and Chicks be shown singly instead of pairs, and better facilities for protection and display.

Entries, Offerings and Awards, Fair 1882.

Lot....	Breed, etc.	Number entries.	Amount premiums offered.	Amount premiums paid.
66	Asiatic	88	$70	$60
67	Dorking, Dominique, Plymouth Rock	33	50	34
68	Spanish	32	50	46
69	Hamburg	17	60	34
70	Polish	11	50	21
71	French	10	30	16
72	Game	26	120	39
73	Bantams	36	90	57
74	Miscellaneous	3	40	9
75	Guineas	5	20	11
76	Turkeys	12	72	32
77	Ducks	34	45	40
78	Geese	16	30	24
79	Rabbits	3	35	8
80	Ferrets	4	10	10
81	Displays	9	40	40
	Total	339	$812	$481

Respectfully submitted.

H. D. EMERY,

Superintendent Class E—Poultry.

CLASS F—MECHANIC ARTS.

SECTION I.

REPORT OF WM. VOORHIES, JR., *Superintendent.*

To the State Board of Agriculture·

As Superintendent of Class F, I offer the following brief report:

The display of articles was numerous and fully equal to former years, the space allotted being well filled.

The following table will give the number of entries and awards made:

Entries, Offerings and Awards, Fair 1882.

Lot.	Article, etc.	Number of entries.	SILVER MEDALS.		DIPLOMAS.		CASH PREMIUMS.	
			Number offered.	Number awarded	Number offered.	Number awarded	Amount offered.	Amount awarded
82	Stoves, Castings, etc	19	14	3	2	2	$35	$35
83	Household Furniture	48	7	3	1	1	30	20
84	Manufactures	33	43	12	....	....	....	....
85	Sewing Machines, etc	25	....	....	....	....	....	....
	Total	125	64	18	3	3	$65	$55

Respectfully submitted,

WM. VOORHIES, JR.,
Superintendent Class F, Section 1.

CLASS F—MECHANIC ARTS.

SECTION 2.

REPORT OF B. PULLEN, *Superintendent.*

To the State Board of Agriculture:

It is with pleasure that I am able to report for this department at the late Fair a very gratifying success. The entries and exhibits largely exceeded that of 1881. There seems to be no want for labor-saving machinery that the skill and enterprise of exhibiters in this department are not able to supply.

The recommendation in our last report, that exhibiters of traction engines be allowed to exhibit in front of the ampitheatre during the late Fair was carried out, and with such results as we think should recommend the continuance of like displays at our future Fairs. There seems to be a growing disposition on the part of exhibiters in this department that all premiums and awards be dispensed with; and we feel assured that should the Board adopt this course, it would but voice the sentiment of four-fifths of all exhibiters in this department.

Class F—Mechanic Arts—*Continued.*

The entries, offerings and awards at the late Fair are given in the following table:

Lot.	Article, etc.	Number of entries.	Silver Medals.		Diplomas.		Cash Premiums.	
			No. offered.	No. awarded	No. offered.	No. awarded	Amount offered.	Amount paid.
86	Engines, machinery, etc....	104	27	15	8	7	$40	$40
87	Light machines	....	15	....	....	....	....	....
88	Implements, vehicles, etc ..	75	17	14	....	....	....	....
89	Farm machinery............	531	....	....	....	....	....	....
	Total..	710	59	29	8	7	$40	$40

Respectfully submitted,

B. PULLEN,

Supt. Class F, Section 2.

FARM MACHINERY ON EXHIBITION.

Threshers—
- Gaar, Scott & Co., Richmond, Ind.—2 entries.
- Northwestern Manufacturing and Car Company, Stillwater, Minn.
- Geo. W. Rouse & Son, Peoria—2 entries.
- Pitt's Agricultural Works, Buffalo, N. Y.—2 entries.
- Kingman & Co., Peoria.
- Nichols, Shepherd & Co., Battle Creek, Mich.
- Hooven, Owens & Renshler, Hamilton, Ohio.
- Eagle Machine Works, Indianapolis, Ind.
- C. & G. Cooper & Co., Mt. Vernon.
- Davis, Luthy & Co., Peoria.

Grain Register—
- Kingman & Co., Peoria.

Separator—
- Kingman & Co., Peoria.
- Rhea, Small & Co., Peoria.
- M. R. J Rumely, LaPorte, Ind.
- Eagle Machine Works, Indianapolis, Ind.
- Davis, Luthy & Co., Peoria.

Clover Huller—
- Geo. W. Rouse & Son, Peoria—2 entries.
- Rhea, Smalley & Co., Peoria.

Corn Harvester—
- Peoria Corn Husker Co., Peoria.

Reaper—
- J. P. Manny, Rockford.
- McCormick H. Machine Co., Chicago.
- D. S. Morgan & Co., Chicago.
- Kingman & Co. Peoria.
- Geo. W. Rouse, Peoria.
- Rhea, Smalley & Co , Peoria.
- Walter A. Wood, Chicago.
- Wm. Deering, Chicago.
- Davis, Luthy & Co.. Peoria.

Dropper—
- Geo. W. Rouse & Son, Peoria.
- Rhea, Smalley & Co.. Peoria.

Self Rake Reaper—
- Geo. W. Rouse & Son, Peoria.
- McCormick H. Machine Co., Chicago.
- Kingman & Co., Peoria.
- Davis, Luthy & Co., Peoria.

Mower—
J. B. Wood, Piano.
Geo. W. Rouse & Son, Peoria—2 entries.
J. P. Manny, Rockford—2 entries.
McCormick H. Machine Co., Chicago.
Rhea, Smalley & Co., Peoria—2 entries.
Kingman & Co , Peoria.
Knowlton Manufacturing Co., Rockford.
Walter A. Wood, Chicago.
Wm. Deering, Chicago.
D. S. Morgan & Co., Chicago—2 entries.
Davis, Luthy & Co., Peoria.

Hay Tedder—
Remington Agricultural Co., Ilion, N. Y.
J. H. Thomas & Son, Springfield, Ohio.

Combined Reaper and Mower—
Geo. W. Rouse & Son, Peoria—2 entries.
Kingman & Co., Peoria.
Rhea, Smalley & Co., Peoria.
McCormick Harvesting Machine Co., Chicago.

Harvester and Binder—
A. Duckett, St. Paul, Minn.
McCormick Harvesting Machine Co., Chicago.
Geo. W. Rouse & Son, Peoria—3 entries.
Sandwich Manufacturing Co., Sandwich.
Kingman & Co., Peoria.
Hoover & Co., Miamisburg, Ohio.
Marsh Binder Manufacturing Co., Sycamore.
Davis, Luthy & Co., Peoria.

Self Binder—
Geo. W. Rouse & Son, Peoria.
Kingman & Co., Peoria.
Sandwich Manufacturing Co., Sandwich.
Rhea, Smalley & Co., Peoria.
Minneapolis Harvester Works, Minneapolis, Minn.—2 entries.
Walter A. Wood, Chicago.
Davis, Luthy & Co., Peoria.

Grain Header—
A. J. Hodges & Co., Pekin.

Horse Hay Rake—
Keystone Manufacturing Co., Sandwich.
Furst, Bradley & Co., Chicago—2 entries.
Kingman & Co., Peoria—3 entries.
Knowlton Manufacturing Co., Rockford—3 entries.
Long & Allstatter Co., Hamilton, Ohio.
Geo. W. Rouse & Son, Peoria—3 entries.
J. H. Thomas & Son, Springfield, Ohio.
Rhea, Smalley & Co., Peoria.
Davis, Luthy & Co., Peoria.
A. W. Coats & Co., Alliance.

Cider Mill and Press—
Keystone Manufacturing Co., Sandwich.
Rhea, Smalley & Co., Peoria—2 entries.
P. P. Mast & Co., Springfield, Ohio.

Corn and Cob Mill—
Kingman & Co., Peoria.

Wind Mill—
Sandwich Enterprise Co., Sandwich.
Kingman & Co., Peoria.
Mast, Foos & Co., Springfield, Ohio.
Turney & Kennedy, Knoxville.
Buchanan Wind Mill Co., Buchanan, Mich.
R. W. Burt, Peoria.
S. Freeman & Son, Racine, Wis.—2 entries.
Batavia Manufacturing Co., Batavia.
Erie Manufacturing Co., Henry.

Cornstalk Cutter—
Geo. W. Brown & Co., Galesburg.
R. H. & C. M. Avery, Peoria—2 entries.
Geo. W. Rouse & Son, Peoria—2 entries.
Parlin & Orendorf, Canton.
Deere, Mansur & Co., Moline.

Power Corn Sheller—
Keystone Manufacturing Co., Sandwich.
Kingman & Co., Peoria.
Geo. W. Rouse & Son, Peoria—2 entries.

Harvester—
Davis, Luthy & Co., Peoria.

Gang Plow—
Pekin Plow Co., Pekin—2 entries.
Deere, Mansur & Co., Moline.

Walking Plow—
Kingman & Co., Peoria—12 entries.
Briggs, Enoch & Co., Rockford—7 entries.
Furst, Bradley & Co., Chicago—14 entries.
Geo. W. Rouse & Son, Peoria—22 entries.
Rhea, Smalley & Co., Peoria—12 entries.
Indianapolis Plow Co., Indianapolis, Ind.
Peru City Plow Co., Peru.
R. C. Buckley, Peoria.
Davis, Luthy & Co., Peoria
Parlin & Orendorf, Canton, 16 entries.
Orris Plow Co., Dixon—6 entries.
Morrison Bro., Fort Madison, Iowa—10 entries
Pekin Plow Co., Pekin—12 entries.
Deere, Mansur & Co., Moline—13 entries.
Moline Plow Co., Moline—12 entries.
John T. Walker, Bloomington—12 entries.
Davenport Plow Co., Davenport, Iowa.
Weir Plow Co., Monmouth—9 entries.

Sulky Plow—
Peru City Plow Co., Peru.
Furst, Bradley & Co., Chicago.
Kingman & Co., Peoria—2 entries.
Pattee Plow Co., Monmouth.
Briggs, Enoch & Co., Rockford.
Long & Allstatter Co., Hamilton, Ohio.
Rhea, Smalley & Co., Peoria—2 entries.
Geo. W. Rouse & Son, Peoria.
R. C. Buckley, Peoria.
Weir Plow Co., Monmouth.
Orris Plow Co., Dixon.
P. P. Mast & Co., Springfield, Ohio.
Parlin & Orendorf, Canton—2 entries.
Davis, Luthy & Co., Peoria.
Morrison Bros., Fort Madison, Iowa.
Pekin Plow Co., Pekin.
Deere, Mansur & Co., Moline—2 entries.
Moline Plow Co., Moline—2 entries.
John T. Walton, Bloomington.
Davenport Plow Co., Davenport, Iowa.

Harrow—
Harrold & Shaw, Batavia—3 entries.
Keystone Manufacturing Co., Sandwich.
Mr. Whitney, New York City—3 entries.
R. Lean, Mansfield, O.
Jacob Mangos, Hartsburg—2 entries.
R. C. Buckley, Peoria.
Ewald Over, Indianapolis, Ind.—2 entries.
Orris Plow Co., Dixon—2 entries.
Geo. W. Rouse & Son, Peoria.
Kingman & Co., Peoria—4 entries.
Rhea, Smalley & Co., Peoria—3 entries.
Thomas Harrow Co., Geneva, N. Y.
P. P. Mast & Co., Springfield, O.
Quincy Manufacturing Co., Quincy.
Deere, Mansur & Co., Moline—2 entries.
Mechanicsburg Mach Co., Mechanicsburg, O.
Davis, Luthy & Co., Peoria.
H. J. Evans, Peoria.
Parlin & Orendorf, Canton—4 entries.
Morrison Bros., Ft. Madison, Iowa.
Furst, Bradley & Co., Chicago—3 entries.

Cultivator—
A. Messersmith & Co., Wenona.
Briggs, Enoch & Co., Rockford.
Geo. W. Brown & Co., Galesburg—2 entries.
Peru City Plow Co., Peru—2 entries.
Sandwich Enterprise Co., Sandwich.
Brown Manufacturing Co., Zanesville, Ohio—2 entries.
Jacob Mangos, Hartsburg—4 entries.
Sandwich Enterprise Co., Sandwich.

- Geo. W. Rouse & Son, Peoria—3 entries.
- Knowlton Manufacturing Co., Rockford—3 entries.
- Day Bros., Delavan.
- Orris Plow Co., Dixon—2 entries.
- R. H. & C. M. Avery, Peoria—2 entries.
- Kingman & Co., Peoria—4 entries.
- Morrison Bros., Ft. Madison, Iowa.
- Deere, Mansur & Co., Moline—4 entries.
- Pattee Plow Co., Monmouth—2 entries.
- Rhea, Smalley & Co., Peoria—3 entries.
- Furst, Bradley & Co., Chicago—3 entries.
- R. C. Buckley, Peoria.
- Long, Allstatter & Co., Hamilton, Ohio.
- Indianapolis Plow Co., Indianapolis, Ind.
- P. P. Mast, Springfield, Ohio—2 entries.
- Weir Plow Co., Monmouth—4 entries.
- Davis, Luthy & Co., Peoria—2 entries.
- Parlin & Orendorf, Canton—4 entries.
- Pekin Plow Co., Pekin—2 entries.
- Oregon Manufacturing Co., Oregon.
- Moline Plow Co., Moline—6 entries.
- Mechanicsburg Machine Co., Mechanicsburg, O.
- Davenport Plow Co., Davenport, Iowa.
- Huthank Plow Co., Indianapolis, Ind.

Corn Planter—
- Rhea, Smalley & Co., Peoria.
- Briggs, Enoch & Co., Rockford—2 entries.
- Geo. W. Brown & Co., Galesburg—4 entries.
- Kingman & Co., Peoria.
- Davis, Luthy & Co., Peoria.
- James Selby & Co., Peoria—3 entries.
- Keystone Manufacturing Co., Sandwich.
- Geo. W. Rouse & Son, Peoria—5 entries.
- R. H. & C. M. Avery, Peoria—3 entries.
- P. W. Thompson, Yates City.
- Deere, Mansur & Co., Moline.
- H. F. Batcheller & Son, Rock Falls—2 entries.
- Wait Manufacturing Co., Grand Haven, Mich,

Corn Drill—
- Geo. W. Rouse & Son., Peoria—2 entries.
- Kingman & Co., Peoria.
- R. H. & C. M. Avery, Peoria.

Check Rower—
- Briggs, Enoch & Co., Rockford.
- R. H. & C. M. Avery, Peoria.
- Ray Plow Co., Burlington, Iowa—2 entries.
- Geo. W. Brown & Co., Galesburg.
- Tate Bros. & Co., Decatur.
- A. N. Thompson & Co., Monmouth.
- Geo. W. Rouse & Son, Peoria—2 entries.
- Rhea, Smalley & Co., Peoria.
- Kingman & Co., Peoria.
- Davis, Luthy & Co., Peoria.
- Haworth & Sons, Decatur, 4 entries.
- P. W. Thompson, Yates City.

Grain Drill—
- D. M. Sherry & Co., Dayton, Ohio—2 entries.
- Rhea, Smalley & Co., Peoria.
- Ewald Over, Indianapolis, Ind.—2 entries.
- Hart, Hitchcock & Co., Peoria—3 entries.
- C. J. John, Hamilton, O.
- Geo. W. Rouse & Son, Peoria—2 entries.
- Kingman & Co., Peoria.
- W. P. Elam & Son, Petersburg.
- Davis, Luthy & Co., Peoria.
- P. P Mast & Co., Springfield, Ohio—2 entries.
- Mechanicsburg Machine Co., Mechanicsburg, O.

Seed Sower—
- Kingman & Co., Peoria.
- Davis, Luthy & Co., Peoria.
- Rhea, Smalley & Co., Peoria.
- J. D. Lahman, Franklin Grove.
- R. C. Buckley, Peoria.
- P. P. Mast & Co., Springfield, O.
- Deere, Mansur & Co., Moline.
- Mechanicsburg Machine Co., Mechanicsburg, O.

Fanning Mill—
- Diamond Fanning Mill Co., Detroit Mich.
- Kingman & Co., Peoria.

Hand Corn Sheller—
Keystone Manufacturing Co., Sandwich.
Geo. W. Rouse & Son, Peoria—2 entries.
Kingman & Co., Peoria.

Hay Loader—
Keystone Manufacturing Co., Sandwich.

Grain Binder, (twine)—
J. B. Wood, Plano.
Kingman & Co., Peoria.
Geo. W. Rouse & Son, Peoria—3 entries.
Davis, Luthy & Co., Peoria.
Wm. Deering, Chicago
Sandwich Manufacturing Co., Sandwich.

MISCELLANEOUS.

Feed Cutter—
Keystone Manufacturing Co., Sterling.

Kemper's Manure Spreader—
Kemper & Burpee Manufacturing Co., Syracuse, N. Y.

Plow Sulky—
Geo. W. Brown & Co., Galesburg.

Seed Sower and Cultivator—
J. D. Lahman, Chicago.

Stump Puller—
Ewald Over, Indianapolis, Ind.

Barrel Cart—
J. D. Lahman, Chicago.

Binder Truck—
Ewald Over, Indianapolis, Ind.

Pulverizer—
Rhea, Smalley & Co., Peoria—2 entries.

Broom Corn Drill—
R. H. & C. M. Avery, Peoria.

Double Shovel—
Morrison Bros., Ft. Madison, Iowa.
Furst, Bradley & Co., Chicago—2 entries.

The Beater -
Vandegrift & Carter, Princeton.

Socket Plow and Pulverizer.
Geo. W. Rouse & Son, Peoria.

Three Horse Eveners—
Moline Plow Co., Moline—2 entries.
Weir Plow Co., Monmouth.

Garden Plow—
T. W. Cole, Canton.

Broad Cast Seed Sower—
Des Moines Manufacturing Co., Des Moines, Iowa.

Attachment for Fluke Drill—
Frakes & Riner, New Holland.

Castor Coulter—
Weir Plow Co., Monmouth.

Lightning Hay Knife—
Hiram Holt, East Wilton, Maine.

Automatic Checkrow Reel—
O. E. Waterman, Mason City.

Straw Stacker—
Reeves & Co., Columbus, Ind.

Scoop Board for Wagon—
Geo. W. Rouse & Son, Peoria.

CLASS G—FARM PRODUCTS.

REPORT OF J. M. WASHBURN, *Superintendent.*

To the State Board of Agriculture:

The undersigned, Superintendent of Class G, Farm Products, respectfully reports that in his department at the last State Fair, there was a very creditable display of the various articles included in that class. The following table shows the number of entries in each "Lot" in the class; the number of diplomas offered and the number awarded to each Lot in the class; the amount of cash premiums offered, and the amount of cash premiums paid on each Lot in the class, and the total number of entries, total number of diplomas offered, and total number awarded, and the total amount of cash premiums offered, and total amount paid.

Entries, Offerings and Awards, Fair 1882.

Lot.	Articles, Etc.	Number of entries.	Diplomas.		Cash Premiums.	
			No. offered.	No. awarded	Amount offered.	Amount paid.
90	Grains and seeds	133	2	1	$258	$217
91	Vegetables	165	....	....	166	148
92	Butter, cheese, etc	53	5	2	141	126
93	Bread, cakes etc	204	1	....	147	136
94	Bread and cakes, by girl under 14 years of age	51	....	....	90	74
	Total	606	8	3	$802	$701

The space heretofore furnished for the display of Farm Products, has for the last two years proven wholly inadequate for the purpose. Many persons have applied for room to exhibit specimens of Farm Products who have been disappointed for want of room. If the Superintendent could have furnished the necessary space for exhibition of Farm Products, the extent and variety of the exhibition in Class "G" would doubtless have been trebled. It is scarcely complimentary to the liberality and justice of the Board, that the agricultural products of the State, for the encouragement of which the State Board of Agriculture was chiefly organized, should be confined to the narrow limits of one wing (one-fourth) of a not very large building. And the undersigned cannot too strongly or forcibly recommend that another building be procured for the exhibition of Farm Products in the future.

Respectfully submitted,
J. M. WASHBURN,
Supt. Class G.

CLASS H—HORTICULTURE AND FLORICULTURE.

REPORT OF GEO. S. HASKELL, *Superintendent,*

To the State Board of Agriculture:

Your Superintendent takes great pleasure in reporting a very large and attractive exhibit in Horticulture and Floriculture at the late fair.

The superior excellence of the general exhibit in this department has never been surpassed, and there was much more interest manifested by the general public in this collection than heretofore.

The following table gives the number of entries, amount of premiums offered and paid at the late fair.

The exhibit was not displayed to the best advantage owing to the limited space allotted to this department:

SECTION 1.

Lot.	Articles, Etc.	Number of entries.	Silver Medals.		Diplomas.		Cash Premiums.	
			No. offered.	No. awarded	No. offered.	No. awarded	Amount offered.	Amount paid.
95	Trees, flowers and plants (professional)	63	2	1	4	1	$224	$188
96	Cut flowers (professional)	100	2	1	1	1	278	254
97	Flowers and plants (amateur)	18	....	....	....	....	77	33
98	Cut flowers (amateur).	93	.. ..	....	....	... .	136	121
	Total..............	274	4	1	5	2	$715	$596

SECTION 2.

Lot.	Articles, Etc.	Number of entries.	Silver Medals.		Diplomas.		Cash Premiums.	
			No. offered.	No. awarded	No. offered.	No. awarded	Amount offered.	Amount paid.
99	Home-grown fruits (professional)	31	....	....	.. ..	....	$389	$259
100	Home-grown fruits (amateur)	53	....	......	.....	....	94	84
101	Jellies, preserves, pickles, etc..........	..	1	....	3	.. . .	178	153
	Total........	84	1	. ...	3	....	$561	$496

Respectfully submitted,
GEO. S. HASKELL,
Supt. Class H.

CLASS I—FINE AND LIBERAL ARTS.

REPORT OF JOHN P. REYNOLDS, *Superintendent.*

To the State Board of Agriculture:

The display of articles in this department was creditable, and, considering the accommodations provided for exhibiting the same, was large.

Some valuable and highly meritorious specimens of artistic work are deserving of especial mention, and the attention paid thereto by the crowds in attendance indicate an increased interest in the fine and liberal arts by the great majority of visitors at agricultural fairs.

The following table gives the number of entries, offerings and awards at the Fair of 1882.

Lot	Article, Etc.	Number of entries	Silver Medals.		Diplomas.		Cash Premiums.	
			No. offered.	No. awarded	No. offered.	No. awarded	Amount offered.	Amount awarded
102	Fine arts	111	28	14	29	8	$45	$45
103	Musical instruments	9	12	3	12	4		
104	Printing, engraving, etc.	44	18	3	15	6		
104½	Architectural drawings, etc	2			7		85	
105	Wax, feather, hair work, etc	30	3		1		46	25
	Total	196	61	20	64	18	$176	$70

Respectfully submitted,
JOHN P. REYNOLDS,
Superintendent Class I.

CLASS K—TEXTILE FABRICS.

REPORT OF E. H. BISHOP, *Superintendent.*

To the State Board of Agriculture:

The exhibit in this class at the late Fair has seldom been surpassed in the quality and number of attractive articles displayed.

The number of articles in the several lots compared favorably with that of previous years.

The entries, offerings and awards at the Fair were as follows:

Lot	Article, Etc.	Number of entries	Diploma.		Cash Premiums.	
			No. offered.	No. awarded	Amount offered.	Amount paid.
106	Mill fabrics, etc	1	13	1		
107	Household fabrics	91			$105	$95
108	Hand sewing	69			48	44
109	Ornamental needle-work	246			199	191
110	Fancy work	158			83	82
111	Needle-work, by girl under 14	83			71	67
112	Quilts and needle-work	98			69	63
	Total	746	13	1	$575	$542

Respectfully submitted,
E. H. BISHOP,
Superintendent Class K.

CLASS L—NATURAL HISTORY.

REPORT OF JOHN P. REYNOLDS, *Superintendent.*

To the State Board of Agriculture:

The following table gives the number of entries, amount of premiums offered and paid in 1882, at the Illinois State Fair, in the natural history department.

The display was large, and attracted more attention than heretofore.

Considering the inducements offered exhibiters to display valuable cabinets, the collection was most creditable to all concerned.

Lot	Article, Etc.	Number of entries.	Amount premiums offered.	Amount premiums paid.
113	Taxidermy, mineralogy and conchology	14	$230	$230
114	Entomology, etc	14	105	105
	Total	28	$335	$335

Respectfully submitted,
JOHN P. REYNOLDS,
Superintendent Class L.

CLASS M—SPEED.

REPORT OF DAVID E. BEATY, *Superintendent.*

To the State Board of Agriculture:

The following table gives the number of entries, amount of premiums offered and paid for tests of speed at the late Fair.

The entry fees were added to the stakes, which will explain the increase in amounts of premiums paid over the premium offered.

The increased number of entries, with the superior quality of horses exhibited, prove the popularity of this class, and I would respectfully recommend that the premiums be increased.

Entries, Offerings and Awards, Fair 1882.

Lot	Race.	Number of entries.	Amount premiums offered.	Amount premiums paid.
115	Running race—2 and under 3 years—Stake, $100	4	$100	$140
115	Trotting stallions—Stake, $200	5	200	300
115	Trotting race—2 and under 3 years—Stake, $200	7	200	340
115	Trotting race—4 and under 5 years—Stake, $150	9	150	285
115	Trotting race—3 and under 4 years—Stake, $150	4	150	210
115	Trotting race—5 and under 6 years—Stake, $150	5	150	225
115	Running race—3 and under 4 years—Stake, $150	4	150	210
	Total	38	$1,100	$1,710

Respectfully submitted,
DAVID E. BEATY,
Superintendent Class M.

CLASS N—EDUCATION.

REPORT OF EMORY COBB, *Superintendent.*

To the State Board of Agriculture:

There was an increased interest manifested in the Educational exhibit at the late Fair by the general public.

The character of the work was an improvement over previous years, and the large number of country and city schools represented indicates the popularity of this exhibit with the friends of Education throughout the State.

The following table gives the number of entries, amount of premiums offered and paid at the late Fair:

Entries, Offerings and Awards, Fair 1882.

Lot	Exhibit.	Number of entries.	Diplomas.		Cash Premiums.	
			No. offered.	No. awarded	Amount offered.	Amount awarded
116	Graded school exhibit	57	8	8	$48 00	$48 00
117	Graded school exhibit—Sweepstakes	12	5	3	70 00	35 00
118	Country school exhibit	194	16	16	96 00	90 00
119	Country school exhibit—Sweepstakes	21	5	3	70 00	35 00
120	High school exhibit	50	12	12	72 00	72 00
121	High school exhibit—Sweepstakes	11	4	4	60 00	52 50
	Total	345	50	46	$416 00	$332 50

Respectfully submitted,
EMORY COBB,
Sup't Class N.

SUPERINTENDENT OF GROUNDS.

REPORT OF D. W. VITTUM, Jr., *General Superintendent.*

To the State Board of Agriculture:

The police force at the late Fair was efficient, and there was no complaint from visitors and exhibiters of any inconvenience and annoyance from the disreputable crowd which are generally in attendance at State Fairs.

There was an unusually large exhibit of Horses and Cattle, and many new stalls were required in addition to the number specified by the Board.

The local committee provided for all the accommodations called for by the Board, and they were of such character as to please all concerned.

The Mayor of the city of Peoria most heartily and cordially co-operated with the Board in providing conveniences for the comfort and safety of all in attendance.

The Chief of Police of Peoria and the Sheriff of Peoria County rendered important service in protecting life and property.

It is recommended that a vote of thanks of the Board be extended to these gentlemen for the substantial aid rendered.

The citizens of Peoria spared no reasonable effort to increase the attendance at the Fair, and the well established reputation of the city for hospitality did not suffer in the entertainment provided for visitors.

Respectfully submitted,
D. W. VITTUM, Jr.,
Sup't of Grounds.

FORAGE AND STALLS.

REPORT OF J. L. MOORE, *Superintendent.*

To the State Board of Agriculture:

The receipts at the late Fair for stalls and pens were $918. The expense for repairs and fixtures on the Fair Grounds for the late Fair was $229.21. Lumber $523.33, carpenters $251 50. A total of $1,003.94, or $85.94 more than the receipts for stalls and pens.

There was much less complaint than expected in the inauguration of the plan for charging stall and pen fees, as there was hardly an exhibiter who complained that the charge was unreasonable.

The plan of charging for stalls and pens had the effect of inducing exhibiters to make less demand for space without inconvenience.

The specifications of requirements do not call for sufficient number of stalls and it is recommended that in future an additional number of horse and cattle stalls be called for.

The Board constructed fifty additional horse stalls and closed up over forty stalls for parties desiring box stalls.

There was considerable expense incurred in renewing partitions and making feed boxes, requiring the entire time of several carpenters.

Hay and grain of good quality were furnished exhibiters at market rates at no expense to the Board. Levi Smith, of Peoria, acceptably filled the position of Assistant Superintendent.

The straw furnished by the Peoria committee was rye straw of superior quality and ample for all requirements.

Respectfully submitted,

J. L. MOORE,

Supt. Forage and Stalls.

AMPHITHEATRE AND SHOW RING.

REPORT OF J. W. JUDY, *Marshal.*

To the State Board of Agriculture·

I have the honor to report that the management of the exhibition of stock in the ring was satisfactory to the exhibiters and visitors.

The large display of horses and cattle in one ring made it necessary to show much of the stock away from the amphitheatre, and such exhibiters had reason for complaint.

It is recommended that another show ring be required in future for cattle, where such stock may be shown to the best possible advantage.

The last premium list provided for the showing of 89 rings of cattle and 103 rings of horses, besides the speed rings.

These two hundred rings are expected to be shown during the four days of the Fair, requiring an average of fifty rings per day.

The change suggested has worked well wherever tried. Not the least of the advantages of having a separate show ring for cattle, is the distribution of the crowds, and the safety to the stock and people, as it is well known that cattle are slow in their movements, and when shown in crowded rings with horses, are in great danger of accident.

Respectfully submitted,

J. W. JUDY,

Marshal of the Ring.

PRESS DEPARTMENT.

REPORT OF LEWIS ELLSWORTH, *Superintendent.*

To the State Board of Agriculture:

The wisdom in providing ample facilities for the convenience of the representatives of the press, has been evidenced by the increased attendance at our State Fairs of 1881 and 1882.

I would suggest that the Press Department be given that increased attention at our Fairs its importance merits. Certain it is, the press is the connecting link between the Agricultural Department and the people. Proper attention on the part of the State Board will be fully reciprocated by the press of the State.

My inability to be present at the Fair of 1882 caused me more regret than I can express.

A. S. Landon, Esq., at my request, acted as Assistant Superintendent of the Press Department, who, I am pleased to say, gave every possible attention to the discharge of the duties of that position, and, I am informed, in a satisfactory manner.

Respectfully submitted,

LEWIS ELLSWORTH,

Superintendent Press Department.

SILVER PRIZE PLATE.

To the State Board of Agriculture:

There are still two pieces of silver plate on hand, that were purchased two years ago to be awarded as premiums at the Fat Stock Show.

The undersigned committee, in charge of these premiums, would recommend that these pieces of silver plate be offered as premiums at the next Fat Stock Show, to such rings as the Committee of Arrangements for said Show may determine.

Respectfully submitted,

D. B. GILLHAM,
S. D. FISHER,

Committee.

Mr. Beaty introduced the following resolution, which was,

On motion of Mr. Moore,

Adopted.

Resolved, That, as the severe indisposition of Hon. Wm. M. Smith prevents his attendance upon the meetings of the Board, that the Hon. Lafayette Funk, his immediate successor, be invited to sit with and participate in the deliberations of the Board during the present session.

The application of M. N. Hood, of Guelph, Can., for silver medal, awarded on dressed carcass of mutton at the 1879 Fat Stock Show, was read.

Motion Mr. Haskell carried,

That the Secretary have the three silver medals offered for mutton carcasses at the 1879 Fat Stock Show properly engraved, and sent to the parties awarded the following premiums: Carcass of mutton of best quality; fattest carcass; the carcass showing the largest per cent. of net to gross.

Rudolph Weber, of Chicago, presented a claim of $15 for killing hogs at the last Fat Stock Show.

Motion Mr. Gore carried,

That the claim be allowed and paid.

Communication of A. B. Richards, of Freeport, Ill., was read, asking for $400, amount of loss sustained in printing, according to contract, the premium list of the State Fair for 1877. The loss was largely owing to the failure of advertisers to pay agreed rates for cards inserted therein.

Motion Mr. Voorhies carried,

That the communication be laid on the table.

Mr. Washburn introduced the following resolution:

Resolved, That the Treasurer of the Illinois State Board of Agriculture be and is hereby directed to pay to the Treasurer of the Randolph County Agricultural Board the sum of $200 as their share of the State appropriation for the years A. D. 1879 and A. D. 1880, which was withheld by this Board, and which lapsed into the State Treasury on the 30th day of September, 1881, and that the Board request the present General Assembly to make an appropriation to this Board of that sum so lapsed and covered into the treasury.

Pending the discussion of the resolution,

On motion of Mr. Haskell,

The Board adjourned until 2 o'clock P. M.

AFTERNOON SESSION.

Board met, pursuant to adjournment.

President Scott in the chair.

Present—President Scott, Ex-President Gillham, Vice-Presidents Emery, Haskell, Moore, Dysart, Snoad, Vittum, David, Beaty, Judy, Voorhies, Pullen, Gore and Washburn.

Absent—Vice-Presidents Ellsworth, Reynolds, Cobb, Smith and Bishop.

The discussion of the resolution introduced by Mr. Washburn, and pending at time of adjournment, was resumed.

The ayes and nays being called for, the resolution was lost, by the following vote:

Ayes—Messrs. Beaty, Voorhies, Gore and Washburn.

Nays—Messrs. Emery, Haskell, Moore, Dysart, Snoad, Vittum, David, Judy, Pullen, Gillham, Scott.

The Committee on Miscellaneous Awards made the following report, which was,

On motion of Mr. Judy,

Adopted.

REPORT OF COMMITTEE ON MISCELLANEOUS AWARDS.

To the State Board of Agriculture:

The undersigned committee, to whom were referred the recommendations of awarding committees on miscellaneous entries at the Fair, have examined and duly considered the action of the judges, and after consultation with the superintendents of the several departments interested, beg leave to submit for the approval of the Board the following list of commendations.

Respectfully submittted.

GEO. S. HASKELL,
D. E. BEATY
J. M. WASHBURN.

LOT 85—SEWING AND KNITTING MACHINES AND SPINNING WHEELS.

Family Sewing Machine:
W. T. Tate, Chicago ...... Worthy of mention for simplicity.

Family Sewing Machine:
Domestic Sewing Machine Co., Chicago ...... Highly commended

CLASS F—MECHANICS.

SECTION –.

B. PULLEN, *Superintendent.*

LOT 86—ENGINES, MACHINERY, ETC.

Special Attachment to Traction Steam Engine:
C. Aultman & Co., Canton, O. ...... Highest commendation

Display of Marble and Marbleized Slate and Iron Mantles:
King & Bull, Peoria ...... Highest commendation.

LOT 88—IMPLEMENTS, VEHICLES, ETC.

Road Cart.
Aurora Road Cart Co., Aurora ...... Highest commendation.

Wire Fence Stretcher:
John McDormaid, Rockford ...... Highest commendation.

Tire Cooler:
Beard & Foreman, Fairmount ...... Highest commendation.

Buggy Neck-Yoke:
John McDermaid, Rockford ...... High commendation.

Shoveling Board for Wagon:
J. M. Morris, Bradford ...... Highest commendation.

Wrought Iron Stake:
Hanna Wagon Co., Peoria ...... Highest commendation.

Gravel Dump for Wagon.
Kimball & Anderson, Peoria ...... Highest commendation.

Combined Wagon Rack and Box:
J. McCallum & Bro., Chicago ...... High commendation.

CLASS I—FINE ARTS.

JOHN P. REYNOLDS, *Superintendent.*

LOT 104—PRINTING, ENGRAVING, PENMANSHIP, AND DECORATIVE ART DESIGNING.

Wood Carving:	
Wm. Marsters, Peoria	Highest commendation.
System Short-hand Writing:	
J. Geo. Cross, Bloomington	Highest commendation.

LOT 104½—ARCHITECTURAL AND MECHANICAL DRAWINGS.

Landscape Drawing of Cemetery:	
A. N. Carpenter, Galesburg	Highest commendation.
Landscape Drawing of Private Home-grounds:	
A. N. Carpenter, Galesburg	Highest commendation.

CLASS K—TEXTILE FABRICS.

E. H. BISHOP, *Superintendent.*

LOT 106—MILL FABRICS, ETC.

Display of Furs:	
S. B. Hartz & Co., Peoria	Highest commendation.
Display of Fur-lined Goods:	
S. B. Hartz & Co., Peoria	Highest commendation
Display of Seal-skin Garments:	
S. B. Hartz, Peoria	Highest commendation.
Case of Regalia and Embroidery:	
John A. Bush, Peoria	Highest commendation.

LOT 107—HOUSEHOLD FABRICS.

Knitted Table Cover:	
Mrs. Geo. Frederick, Peoria	High commendation.

LOT 108—HAND SEWING.

Display of Dress Patterns:	
Mrs. M. M. Espy, Peoria	Highest commendation.

LOT 109—ORNAMENTAL NEEDLE WORK.

Lamp Screen, in Chenille—Machine work:	
Domestic Sewing Machine Co., Chicago	Highest commendation.
Kensington Embroidery—Machine work:	
Domestic Sewing Machine Co., Chicago	Highest commendation.
Etching—Machine work:	
Domestic Sewing Machine Co., Chicago	Highest commendation.
Applique Work, on Machine:	
Domestic Sewing Machine Co., Chicago	Highest commendation.

LOT 110—FANCY WORK.

Air Castle:	
Mrs. Geo. Frederick, Peoria	Highest commendation.

CLASS E—POULTRY.

H. D. EMERY, *Superintendent.*

LOT 74—MISCELLANEOUS.

Cages of Linnets:
F. M. Cottle, Peoria .... Commended.

Two Greyhounds:
S. Rento, Rosefield .... Commended.

Female Greyhound:
W. H. Warner, Wilmington .... Highest commendation.

CLASS F—MECHANICS—SECTION 1.

WM. VOORHIES, *Superintendent.*

LOT 82—STOVES, CASTINGS, WORKED METALS, ETC.

Heater:
O'Brien Bros., Peoria .... Diploma.

Ice Cream Freezer:
Ger. Metzger, Port Byron .... Diploma.

Fluting Machine:
F. M. Cottle, Peoria .... Diploma.

Clothes Wringer:
F. M. Cottle, Peoria .... Diploma.

Gasoline Stove:
Myers M'f'g Co., Chicago .... Dioloma.

Perforated Pie Plates:
C. T. Hurd, Peoria .... Diploma.

Sash Lock and Sash Tightener:
J. Chandler, Warsaw .... Commended.

LOT 83—HOUSEHOLD FURNITURE.

Display of Brooms and Brushes:
John Kirkman, Peoria .... Diploma.

Dog Power for Churn:
John McDermaid, Rockford .... Diploma.

Butter Ladles:
Cornish & Curtis, Fort Atkinson, Wis .... Diploma.

Fly Exit Screen:
C. W. Ellis, Peoria .... Diploma.

Butter Press:
Vermont Farm Machine Co., Bellows Falls, Vt .... Diploma.

Bed Spring:
S. M. Barnes, Canton .... Diploma.

Milk Cooler:
A. C. Clark, Manchester, Iowa .... Highest commendation.

Improvement on Wash-boiler:
Selk & Schultz, Galesburg..Diploma.

Water Filter:
Isaac Perry, Peoria..Diploma.

Farrel's Patent Laboratory:
Schleicher & Son, Peoria..Diploma.

Creamer:
Vermont Farm Machine Co., Bellows Falls, Vt..Silver Medal.

LOT 84—MANUFACTURES OF VARIOUS KINDS.

Display of Horsford's Acid Phosphate and Baking Powder:
Rumford Chemical Works, Chicago..Diploma.

The Sanders Gas Machine:
Peoria Gas Machine Co., Peoria..Diploma.

Tooth Powder.
Bean & Perry Manufacturing Co., Rockford..Diploma.

Flavoring Extracts:
Bean & Perry Manufacturing Co., Rockford..Diploma.

Humane Curry Comb:
Miller Comb Co., Chicago..Commended.

Hall's Safe
Hall's Safe Co., Cincinnati, Ohio..Diploma.

Case Horse Shoes:
W. L. Yates, Dunlap..Diploma.

Liniment
J. C. Weis, Peoria..Diploma.

Patent Colander and Fruit Press
Mrs. Loretta Brownlow, East Paw-Paw..Highest commendation.

Pie Marker:
Mrs. Loretta Brownlow, East Paw-Paw..Highest commendation.

Ladies' Portable Wire Fence:
Mrs. Loretta Brownlow, East Paw-Paw..Highest commendation.

Mr. Gillham introduced the following resolutions, which were adopted, on motion of Mr. Washburn:

WHEREAS, A number of the members of this Board with this meeting retire from service in connection with the Illinois State Board of Agriculture, therefore, be it

Resolved, That we extend to such members at the close of their term of active and faithful service in connection with the Illinois Department of Agriculture, the assurance of our unreserved confidence and esteem, and tender them the heartiest thanks of the people of the State for their long continued, conscientious, able, and gratuitous labors in behalf of the industrial interests of the commonwealth.

Resolved, That the Secretary of the Board be and he is hereby instructed to forward to each of the following retiring members a copy of these resolutions, viz: Hon. David E. Beaty, Jerseyville; Hon E. H. Bishop, Effingham; Hon. Emory Cobb, Kankakee; Hon. Lewis Ellsworth, Naperville; Hon. H. D. Emery, Chicago; Hon. J. L. Moore, Polo; Hon. W. M. Smith, Lexington; Hon Charles Snoad, Joliet; Hon. Wm. Voorhies, Jr., Voorhies.

Mr. Emery introduced the following resolution, which was adopted, on motion of Mr. Gillham:

Resolved, That the Secretary be and is hereby instructed to complete the catalogue of the library, commenced in Vol. 16, transactions of the State Board of Agriculture, by adding to it the purchases, donations and exchanges to the close of the present year, and have it published in pamphlet form for the use of members of the Board and public.

Motion Mr. Haskell carried,
That one thousand copies of the library catalogue be published.

Motion Mr. Haskell carried,

That a committee of three be appointed from the members holding over, for the purpose of presenting to the incoming Board such changes in the future specifications of requirements for the next Fair as the experience of the retiring Board might suggest.

President appointed as said committee Messrs. Haskell, Gillham and Vittum.

On motion Mr. Judy,

The Board adjourned until 9 o'clock A. M. to-morrow.

DEPARTMENT OF AGRICULTURE,
SPRINGFIELD, Jan. 3, 1883.
9 o'clock A. M.

Board met pursuant to adjournment.

President Scott in the chair.

Present—President Scott, ex-President Gillham. Vice-Presidents Emery, Moore, Dysart, Snoad, David, Beaty, Judy, Pullen, and Washburn.

Minutes of yesterday's session read and adopted.

Mr. Gillham made the following report as one of the delegates to the National Agricultural Convention, which,

On motion of Mr. Judy,

Was received and ordered spread upon the journal.

To the State Board of Agriculture:

While I attended each of the conventions called by Commissioner Loring, at Washington, D C., Jan. 11, 1882, except that of Horticulture and wine growing, I gave more particular attention to the convention called in the interest of Live Stock, or the animal industries and was so situated in regard to that convention, that I could not give to others that time and attention necessary to make a correct report of them.

Leaving Chicago on the afternoon of Monday, the 9th of January last, via the Baltimore & Ohio Railway, we arrived in Washington on the next or Tuesday evening, at ten o'clock. I was not present at the opening of the convention, which occurred at twelve M. of that day.

The papers presented were of a high order, ably reflecting the views of their various originators, and were very interesting.

There were represented twenty-one States, and the Cherokee, Choctow and Creek Indians, and each of these by a paper by one or two delegates. The discussion of each took a very broad range, very instructive to those present, and would be to the general public, could they have been properly disseminated.

As there were several delegates present from your Board, I felt that if I, as one of your humble delegates, represented anything specially, it was practical agriculture, stock-breeding and feeding, and the dangers that environ that branch of our vocation from contagious diseases, and to this I will direct attention alone, leaving to the other delegates, who were present, to report as best suits them upon the other several conventions.

The subject of "Animal Husbandry," was opened by an ably written paper by Prof. George E. Morrow, of the Illinois Industrial University, which I will not attempt a report upon, but regret that time and space forbid its reproduction in full Naturally, the discussion of the subject treated upon by Prof. Morrow, ran into the subject of contagious diseases of domestic animals, and ultimately into that of contagious pleuro-pneumonia or lung plague in cattle. When the discussion had taken this shoot, it was announced by the Chair that the time had arrived for the reading of a paper upon that subject by Prof. Law, of Cornell University, New York.

In starting out, the Professor briefly noticed the operations and value of Veterinary Science, as applied in Europe in the extirpation of contagious diseases of live stock. He said that formerly Europe was devastated by rinderpest with a loss of 20 to 50 per cent. of cattle, and sheep pox also ravaged that country with a mortality nearly equaling that of rinderpest in cattle. Now, by the aid and application of Veterinary Science little is known of them outside the Steppes of Russia. Rinderpest was introduced into England in 1865, and from neglect of restrictive measures it increased in the number of attacks to 13,000 weekly in a single year, when active measures were taken for stamping it out, and within a year it has virtually disappeared from the country. During this outbreak the loss to the country was about $50,000,000. Lung Plague has in forty years cost England $500,000,000, which might have been saved to the country by the application of means as seen above, in the early stages of the disease. Free trade and interchange of continental cattle have maintained the plague in England to such extent that it seems to have a firm hold upon the country and now almost impossible to suppress and the Professor cites this as one of the causes, if not the prime cause, of agricultural depression in that country.

He also cites us to the countries from which this destroyer of prosperity has been exterminated, viz. Norway, Sweden, Denmark, Switzerland and other European countries, and in our own, Massachusetts and Connecticut, showing conclusively that it can be done, as it has been done.

The Professor discussed learnedly the subject of anthrax, a microscopic parasite, the *Bacillus Anthracis* as the means of disseminating this class of diseases, not alone among domestic animals, but the *genus homo* as well, as shown in typhoid fever, cholera, etc., recommending as a preventive for any of these virulent diseases, perfect cleanliness, good ventilation, plenty of pure water, and the removal of all cesspools, whether in feeding lots, pastures, or on the farms.

After referring at some length to the possible protection by inoculation, he conceded the danger of the method, and that the spores produced therefrom might be a source of contagion, and declared the only sure method to be—thorough stamping out and disinfection.

The cost of inoculating 40,000,000 cattle could not be less than $4,000,000 and that to be followed up at birth or importation of all the cattle that were to follow; while half of the latter sum judiciously applied would extirpate the disease from the land, and relieve the country from its danger unless reimported, as the disease is only exotic to our country. The professor drew a line, dividing lung plague and the anthrax diseases of cattle, viz: Texas fever and chicken cholera, and swine plague better known in the west as hog cholera. The latter in certain districts and soils being so permanently seated, or located in the soil, as to demand expensive modification by drainage, deeper cultivation and other costly and time-requiring methods for its eradication; while lung plague is not indiginous to our climate or soil, and compared to our whole, is yet confined to a very limited area, and apart from infected cities from which it freely radiates to enclosed farms where it can certainly be effectually eradicated. The professor stated and statistics prove that lung plague now costs us no less than $2,000 000 annually on our exports alone; and probably a million more of incidental losses at home, while yet confined, so far as known, to five States and the District of Columbia.

What, I ask, will be the results, if by the importation of thoroughbred cattle for breeding purposes, or dairy calves, this terrible malady should obtain a foothold in the great breeding and feeding grounds of the west, or of even our State?

We are told that a million head have reached Chicago alone in a year, during the year 1880, about 40,000 of which were nominally from Chatauqua county, New York, where there is no lung plague known or reported.

How many have passed through the other "receiving ports" of the State?

The question was asked, what it would cost to extirpate the disease in this country, confined as it is to five States and one small District.

The professor said, as a member of the treasury cattle commission he had made a rough estimate as to what it would cost That to indemnify the owners of the infected herds, aside from the veterinary and service of marshal, etc., it would require not far from $2,000,000; but if it was carried west of the Alleghany mountains, there was no estimating the cost.

The danger of its migration west, as you can readily perceive, is in the immense traffic in dairy calves which has so recently assumed such immense proportions. Formerly the traffic from east to west was limited to a few costly breeding animals, where there was little or no danger.

As the west is the chief beef-producing region of this continent, this becomes particularly a western question, and one that vitally interests the producers of every pound of beef, butter, milk and cheese between the two great mountain ranges of the continent. It was not the interests of the Atlantic States that were suffering from the proscription of American beef from European markets. They are little interested, as they consume all the beef they can produce and buy largely from us.

But it is the great beef producing west that has been and is suffering by this proscription, and the losses are western losses.

When it was shown conclusively by Professor Law that the disease was not, nor could become indiginous to this country, owing to climatic and other causes, and that once exterminated it could be reproduced only by reimportation, and that by careful inspection by our custom officers we would forever be exempt from it. Upon the floor of the convention I took the ground that Illinois could better afford to pay the sum stated by Professor Law as required to extirpate this disease, than to take the chances of its entering her domain, and I here reiterate the statement, that in my judgment it would be cheaper for her to furnish the whole two millions necessary for its extirpation than to allow her great cattle interests to become infected by it, as, if once infected, it would cost her, like England, $50,000,000 to get rid of it.

It was stated on the floor of the convention that lung plague had existed in the Atlantic States for forty years. What, I ask, would be the loss to the Western States in a like period of time? I answer, it would exceed the limit of computation.

While perhaps most of you are acquainted with the history of the disease in the State of Massachusetts, yet its most remarkable feature will bear repetition here, as given by one of the commissioners appointed by that State for its extirpation, Dr. George B. Loring, our present Commissioner of Agriculture.

The Dr. said: "In 1859 there were imported from Holland to Massachusetts some Dutch cattle, now called Holsteins. They were taken from Boston to their destination on wagons, because they were in such condition they could not travel on foot. Three of them died shortly after their arrival. Out of the herd there was one calf sent to the town of North Brookfield, in the county of Worcester, where the dairying business is conducted on a large scale. This animal went there about the month of November, 1859. In the winter it was discovered that the calf, as well as the other cattle associated with it, was attacked by a disease which was soon ascertained to be contagious pleuro-pneumonia, the history of which was well known, and the remedy for which, in England, Holland and South Africa, had been extirpation.

"Some working oxen engaged in moving a barn caught the disease from those of their number that had been exposed, and soon an area of ten miles was found to be infected.

"The Legislature was applied to by the Agricultural Board for some remedy. A commission was immediately appointed, and $125,000 appropriated to extirpate the disease. As a member of that commission, I assisted in isolating every case in the infected district. After isolation, if a diseased animal was found, he was killed at once, and the infected herd with him. Not a case has been heard of in the State since."

The same remedy can be applied anywhere and with similar success. Thus, gentlemen, is seen the rapidity of its dissemination and the danger of delay in action. The farmers, breeders and feeders of the West, and, in fact, the entire community, should bring an influence to bear upon their legal representatives that they shall put forward all their energies in seeking out a remedy and its immediate application. As the subject has become one of national importance, and, as shown in the discussion on the floor of the convention, to embrace constitutional questions as regards the rights of the Federal Government in the States which, by our dual system of government, must be conceded wherein the Congress shall attempt statutory legislation, the remedy, in my judgment, must be in the States themselves, to be aided by Congress in defraying the expense of extirpation by liberal appropriations from the National Treasury.

Dr. Loring called attention to a bill that was introduced during the last session of Congress, and after explaining its measures somewhat, moved the appointment of a committee of three, by the President *pro tem.* (Mr. Blount, of Colorado,) for the purpose of procuring all bills that were before Congress upon this subject, that an understanding by the convention might be had of the action taken thus far by Congress, and to the end that the convention could intelligently set forth the urgent necessities of the situation. That committee was composed of Prof. James Law, of New York; Hon. Henry C. Meredith, of Indiana, and myself, who took immediate steps to procure all the bills hitherto introduced in both houses of Congress upon the subject, consisting of four in the House and four in the Senate, or eight in all, all of which we found to contain subjects other than pleuro-pneumonia, and very voluminous, when, after a thorough and careful examination of each one, giving it the incessant and continuous labors of five evenings until after midnight, did on Monday, the 16th, present the subjoined report:

REPORT OF COMMITTEE ON LUNG PLAGUE.

Your committee appointed to secure all bills offered in the last and present Congress treating on the subject of the extinction of the contagious pleuro-pneumonia of cattle, with a view of recommending legislation, beg leave to report that they have had them under consideration, and herewith present them, together with the recommendations below.

In the various bills we have found provisions for other objects than the extinction of contagious pleuro-pneumonia, and believing, as we do, that the special urgency of this case demands speedy and specific action, we recommend the passage of a single act for this exclusive purpose.

This we advocate in view of the existing yearly losses of millions of dollars by the pleuro-pneumonia or lung plague; of the steadily increasing danger of the extension of this disease to the open grazing grounds of the West and South; with the certain increase of the losses to tens of thousands of millions, and of the certainty with which this plague, exotic to our land, can be stamped out and permanently excluded from the United States, which cannot be said with equal confidence of any other of our existing animal plagues.

1. The extinction of the existing germ would be the extinction of the disease for all time on this continent, unless reimported.

2. While we heartily approve of Federal legislation upon other contagious diseases of animals, for investigation, experiment, exclusion or extinction, as well as for statistics on animal industries, yet we are unanimously agreed in the opinion that no such object should be provided for in the same act with Lung Plague, nor should any money appropriated for Lung Plague be made available for any other such purpose.

3. That in view of the terrible losses that would accrue from the extension of this Lung Plague, we are of opinion that such extension should be provided against by the prohibition of the movement of any neat cattle out of an infected State into any other State or territory, or the District of Columbia, excepting under a quarantine of three months, to be controlled by a veterinary sanitary organization designated by Congress.

This we consider the first duty of Congress in this matter, being a measure of protection which is essentially prerequisite to all effective measures for stamping out the Plague, and one which cannot be constitutionally applied by the States, but must be done by the Federal Government, in accordance with the clause that Congress alone can regulate inter-State commerce.

4. That in the matter of the extinction of the Lung Plague in the different infected States and in the District of Columbia, we recognize the difficulties that attend the construction of a statute which shall enable the Federal Government to operate effectively within the individual States for this purpose; and if Congress cannot devise an effective measure of this kind, we would strongly advocate that a sufficient appropriation should be made out of the Federal treasury to meet the greater part of the outlay of the different States in carrying on this work, such money to be disbursed by some designated officers of the Federal Government, on approval by the above named veterinary sanitary organization, of the method and execution of the work conducted by the State authorities for the extinction of this Plague.

5. In advocating such an appropriation, we would represent that the infected States are not liable to be seriously injured by the extension of this Plague, as are the States as yet unaffected, so that it is even more for the interests of the latter than for the infected States to have the disease speedily *stamped out;* also, that according to the best authorities, two million dollars judiciously applied would more than suffice for the complete extinction of this Lung Plague of cattle, while we are now, in consequence of its existence, losing considerably more than two million dollars yearly on our exports of cattle to Great Britain alone; and, as these cattle for export are mainly furnished by the West, this loss is almost exclusively a Western one.

The most essential measures for *stamping out* the disease in infected districts are the following:

First—To prohibit all movements of cattle, except by special permit.

Second—To prohibit the pasturage of two or more herds in one enclosure, except under special permit.

Third—To prohibit the pasturage or exposure of cattle on highways or on any other place not securely fenced.

Fourth—To prohibit the turning of infected or suspected cattle into pastures adjoining a highway or other pastures occupied by cattle.

Fifth—To establish in the ports of New York, Philadelphia and Baltimore bonded markets for the reception of cattle from infected States for export and distribution.

Sixth—To secure, under proper veterinary supervision; the prompt destruction of all cattle suffering from an infected Lung Plague,—acute or chronic,—and the disinfection of all yards, buildings, cars, boats, places and articles that have been exposed to contagion.

Seventh—To provide a liberal indemnity for all cattle promptly killed under condemnation of the official veterinarians for the purpose of stamping out the Plague.

Eighth—To provide suitable penalties for failures to report the existence of the disease, and for any other transgression of the rules made under the law

Signed by the Committee,

D. B GILLHAM,
JAMES LAW,
HENRY C. MEREDITH.

The Treasurer made the following reports for the past year, which,

On motion of Mr. Gillham,

Were referred to the Finance Committee:

TREASURER'S REPORTS.

State of Illinois,
In account with JOHN W. BUNN, Treasurer
Illinois State Board of Agriculture.

	Dr.			
1882.				
January 3.	To unexpended appropr'n, acc't Sec'y's salary.	$366 70		
	" " " " Clerk Hire.....	150 00		
	" " " " Curator	300 00		
	" " " " Museum	670 32		
	" " " " Crop Statistics	167 59		
	" " " " Library........	1,223 04	$2,877 65	
July 1.....	To amount received from State account Fair premiums	$3,000 00		
	" amount received from State account Secretary's salary........	2,400 00		
	" amount received from State account clerk hire........	1,500 00		
	" amount received from State account curator........	600 00		
	" amount received from State account porter........	600 00		
	" amount received from State account museum........	500 00		
	" amount received from State account crop statistics........	1,000 00		
	" amount received from State account office expenses........	1,000 00		
	" amount received from State account library........	500 00	11,100 00	
	To amount appropriated for County Agricultural Boards, 1882		6,400 00	$20,377 65
	Cr.			
	By premium account Illinois State Fair	$3,000 00		
	" salary Secretary	2,400 00		
	" " Clerk	1,500 00		
	" " Curator........	600 00		
	" " Porter	600 00		
	" Crop statistics........	1,167 59		
	" Office expenses........	1,000 00		
	" Museum........	158 00		
	" Library	150 55	$10,576 14	
	By unexpended appropriation, salary Sec'y....	$366 70		
	" " " " Clerk....	150 00		
	" " " " Curator.	300 00		
	" " " Museum..... ...	1,012 32		
	" " " Library.........	1,572 49	3,401 51	
	By each of the following sixty-four county agricultural boards, $100 in 1882, viz: Adams, Boone, Brown, Bureau, Carroll, Cass, Champaign, Coles, Cumberland, DeKalb, DeWitt, Douglas, DuPage, Edgar, Edwards, Effingham, Fayette, Ford, Franklin, Fulton, Gallatin, Greene, Hamilton, Henderson, Henry, Iroquois, Jackson, Jersey, Jo Daviess, Kane, Kankakee, Kendall, Knox, Lake, Livingston, Logan, Macon, Macoupin, Mason, Massac, McDonough, Mercer, Montgomery, Morgan, Ogle, Perry, Piatt, Pike, Pope, Randolph, Rock Island, Sangamon, Schuyler, Shelby, Stark, Tazewell, Union, Vermilion, Warren, White, Whiteside, Williamson, Winnebago, Woodford		6,400 00	$20,377 65

JOHN W. BUNN, Treasurer.

Springfield, Illinois, January 3, 1883.

ILLINOIS STATE BOARD OF AGRICULTURE,

IN ACCOUNT WITH JOHN W. BUNN, TREASURER.

STATE FAIR.

	DR.			
1882. Jan. 3.	To balance		$733 19	
	" amount received from State for premiums		3,000 00	
	" " " " Peoria Fair, 1882		29,397 95	
	" " " " Fat Stock Show, 1882		674 56	
				$33,805 70
	CR.			
	By Advertising	$1,374 73		
	" Meals on Fair Grounds	1,188 58		
	" Printing and stationery	1,128 59		
	" Police at Fair	923 05		
	" Traveling expenses Board	812 80		
	" Treasurer's salary	782 00		
	" Hotel bills, Board, at Fair	597 51		
	" Assistant Superintendents Fair	549 65		
	" Lumber for stalls, etc., Fair	523 23		
	" Livery State Fair	379 50		
	" Clerk hire, Department Agriculture	334 00		
	" Gatemen State Fair	331 44		
	" Crop statistics Department Agriculture	283 49		
	" Carpenters at State Fair	251 50		
	" Hotel bills, Board, winter meeting	243 25		
	" Fixtures and stalls Fair Grounds	229 21		
	" Postage	216 00		
	" Assistants of Superintendents of Grounds	211 45		
	" Clerks Treasurer at Fair	205 00		
	" " Auditors "	175 35		
	" " Secretary "	73 00		
	" Music at Fair	1[illegible] 00		
	" Ice, water, sprinkling and hauling at Fair	159 50		
	" Expenses departments Fair	157 30		
	" Hauling at Fair	149 00		
	" Cleaning Fair Grounds	145 45		
	" Labor on Fair Grounds	145 79		
	" Badges for police	90 00		
	" Use of furniture Fair	75 50		
	" Blankets	73 78		
	" Express and freight	48 85		
			$12,018 43	
	By premiums paid Class A—Cattle	$3,695 00		
	B—Horses	3,196 00		
	C—Sheep	1,090 00		
	D—Swine	1,530 00		
	E—Poultry	481 00		
	F—Mechanics	95 00		
	G—Farm Products	701 00		
	H—Horticulture	1,092 00		
	I—Fine Arts	70 00		
	K—Textile Fabrics	542 60		
	L—Natural History	335 00		
	M—Speed	1,710 00		
	N—Education	332 50		
	Silver medals, etc	198 88		
			15,068 38	
	By balance		6,718 89	
			$33,805 70	$33,805 7

SPRINGFIELD, ILLINOIS, January 3, 1883.

JOHN W. BUNN, Treasurer.

ILLINOIS STATE BOARD OF AGRICULTURE,

IN ACCOUNT WITH JOHN W. BUNN, TREASURER.

	FAT STOCK SHOW.			
	CR.			
1882. Jan. 3.	By deficit, Fat Stock Show, 1878	$451 81		
	" " " " " 1879	1,861 24		
	" " " " " 1880	578 18		
	" " " " " 1880	18 03	$2,909 26	
	DR.			
Nov. 23.	To amount of receipts, Fat Stock Show, 1882	$6,271 90		
	" " subscriptions, Fat Stock Show, 1882	3,435 00	....	$9,706 90
	CR.			
	By construction stalls, pens, etc	$791 32		
	" Printing and stationery	629 03		
	" Hotel bills of Board	613 15		
	" Rent Exposition Building	521 34		
	" Lighting Exposition Building	441 85		
	" Traveling expenses of Board	312 11		
	" Expenses committeemen	235 75		
	" Police	190 74		
	" Music	187 50		
	" Sundry expenses departments	164 87		
	" Labor	115 50		
	" Gatemen	94 00		
	" Assistant Superintendents	92 80		
	" Postage	73 38		
	" Clerks Treasurer	75 00		
	" " Secretary	37 00		
	" " Auditors	15 00		
	" Hauling sawdust, etc	52 00		
	" Use steam boiler	21 00		
	" Advertising	15 00	4,678 34	
	By premiums paid Class A—Cattle	$2,380 00		
	B—Horses	.. ..		
	C—Sheep	758 00		
	D—Swine	890 00		
	E—Poultry	188 00		
	Premiums of previous year.	138 00	4,354 00	
	DR.			
	To deficit, Fat Stock Show, 1878	451 81		
	" " " " " 1879	1,861 24		
	" " " " " 1880	578 18		
	" " " " " 1881	18 03		
	Total	$2,909 26		
	CR.			
	By surplus, Fat Stock Show, 1882	674 56		
	Present deficit	$2,234 70		
	DR.			
	To total deficit at previous shows	....	....	2,234 70
			$11,941 60	$11,941 60

JOHN W. BUNN, Treasurer.

SPRINGFIELD, ILLINOIS, January 3, 1883.

Motion of Mr. Beaty carried,

That two members of the Board be appointed to serve on the finance committee, in place of absentees.

President appointed Messrs. Washburn and Pullen to act with the Finance Committee.

The Auditing Committee made the following report, which,

On motion of Mr. Gillham,

Was received and referred to the Finance Committee.

REPORT OF AUDITING COMMITTEE.

To the Illinois State Board of Agriculture:

The following exhibit of the receipts and disbursements for the past year of the State Fair and Fat Stock Show, is presented for the information of the Board.

STATE FAIR.

Dr.

To balance			$733 19
" State appropriation account of premiums			3,000 00
" amount received Peoria Fair, 1882			29,397 95
" amount received Fat Stock Show, 1882			674 56
PAYING ADMISSIONS.			
Number season and coupon tickets	1,006	$1,509 00	
" single admission tickets, adults	43,064	21,532 00	
" single admission tickets, children	3,336	834 00	
" carriage tickets	400	200 00	
BOOTHS, PRIVILEGES, ETC.			
To amount received account booths, permits, etc		4.400 45	
" amount received for stalls, etc		922 50	
NON-PAYING ADMISSIONS.			
Number admissions on complimentaries			
" admissions on complimentaries for carriages			
" admissions on railroad employe tickets			
" admissions on laborers' tickets			
" admissions for helpers, booths, stands, etc			
" admissions crop reporters, newspapers, officers county fairs			
" admissions other than those named above			
Total number of admissions		$29,397 95	
Total receipts			$33,805 70

Cr.

BY EXPENSES OF DEPARTMENTS.

Class.	Assistant superintendents or clerks......	Traveling expenses......	Hotel...........	Livery	Meals at Fair Grounds......	Total..........	
A—Cattle..........................	$28 80	... ...	$28 75	....	$31 66	$89 21	
B—Horses	53 00	$20 25	31 25	....	33 34	137 84	
C—Sheep.............	15 00	8 70	24 25	....	17 66	65 61	
D—Swine	21 00	....	26 00	.... ..	31 33	78 33	
E—Poultry	21 00	8 40	24 50	.. ....	30 33	84 23	
F—Mechanics—Sec. 1.........	39 00	5 35	7 00	....	25 00	76 35	
F—Mechanics—Sec. 2.........	62 45	15 00	38 75	......	10 34	126 54	
G—Farm products	57 00	16 45	11 00	....	41 66	126 11	
H—Horticulture—Sec. 1.... H—Horticulture—Sec. 2....	....	67 95	44 75	... ...	15 33	128 03	
I—Arts	15 00	21 75	19 50	.. ...	8 33	64 58	
K—Textile fabrics............	60 00	15 35	18 25	... .	17 66	111 26	
L—Natural history............	15 00	18 00	27 50	. ...	....	60 50	
M—Speed	....	.... ..	.... ..	... ...	....	....	
N—Education	21 00	24 65	12 25	.. ..	8 34	66 24	
Marshal of Ring	60 00	... ...	27 00	$33 00	16 66	136 66	
Superintendent of Grounds	221 75	.. ...	53 60	246 50	632 63	1,154 48	
Auditing Committee..........	175 35	78 70	141 50	.. ...	159 66	555 21	
President's office............	....	145 00	22 75	... ...	....	167 75	
Ex-President	....	38 05	29 50	..	....	67 55	
Treasurer's office	205 00	.. ...	26 50	... .	34 33	265 83	
Secretary's office	73 00	164 35	149 19	... ..	34 00	420 54	
Reception committee.... ..	....	... .	.. .	50 00	25 00	75 00	
Committee of Arrangements	....	106 25	37 75	.. ...	....	144 00	
Forage department...........	27 00	31 30	31 75	40 00	9 66	139 71	
Press department	44 00	27 30	7 50	... ...	5 66	84 46	
Use of stalls	....	....	....	10 00	....	10 00	
Total	$1,214 35	$812 80	$840 79	$379 50	$1,188 58	$4,436 02	4,436 02

By advertising.	$1,374 73	
" printing and stationery	1,128 59	
" police....	923 05	
" Treasurer's salary...	782 00	
" lumber for stalls, pens, etc	523 23	
" clerk hire, Department of Agriculture...................	334 00	
" gatemen, State Fair	331 44	
" crop statistics, Department of Agriculture	283 49	
" carpenters, State Fair	251 50	
" fixtures and stalls, Fair grounds..	229 21	
" postage....	216 00	
" music at Fair..	160 00	
" ice-water, sprinkling and hauling at Fair	159 50	
" expenses departments at Fair	157 30	
" hauling at Fair..	149 00	
" cleaning Fair ground....................................	145 45	
" labor on Fair grounds...................................	145 79	
" badges for police.	90 00	
" use of furniture at Fair.................................	75 50	
" blankets...	73 78	
" express and freight......................................	48 85	
" premiums	15,068 38	
" balance	6,718 89	
		29,369 68
Total	....	$33,805 70

FAT STOCK SHOW.

Dr.

To amount received sale tickets, 1882		$6,271 90
To amount received subscriptions, 1882		3,435 00

Cr.

By deficit previous Fat Stock Shows	$2,909 26	

BY EXPENSES OF DEPARTMENTS.

Class.	Assistant superintendents and clerks	Awarding committees	Hotel	Traveling expenses	Total
A—Cattle	$29 30	$152 75	$24 50		$206 55
B—Horses			26 50	$8 00	34 50
C—Sheep		33 00	42 00	10 93	85 93
D—Swine	16 50	41 00	37 50	8 00	105 50
E—Poultry	18 00	6 00		14 00	38 00
F—Mechanics			18 25		18 25
Marshal of Ring					
Superintendent of Grounds	5 00		67 00	29 25	101 25
Auditing Committee	15 00		151 50	20 00	186 50
Secretary's office	37 00		107 30	12 40	156 70
Treasurer's office	75 00				75 00
President's office			18 00	103 00	121 00
Forage department	24 00		50 85	89 03	163 88
Committee of Arrangements			41 75		44 75
Vice-President 15th district			7 50		7 50
Vice-President 4th District			4 50		4 50
Vice-President 18th district			6 00	8 50	14 50
Vice-President 1st district				9 00	9 00
Ex-President			7 00		7 00
	$219 80	$235 75	$613 15	$312 11	$1380 81

	1,380 81	
By construction stalls, pens, etc	791 32	
" printing and stationery	629 03	
" rent Exposition building	521 34	
" lighting Exposition building	441 85	
" police	190 74	
" music	187 50	
" sundry expenses departments	164 87	
" labor	115 50	
" gatemen	94 00	
" postage	73 38	
" hauling sawdust, etc	52 00	
" use steam boiler	21 00	
" advertising	15 00	
" premiums	4,354 00	

Dr.

To deficit previous shows	$2,909 26

Cr.

By surplus show 1882	$674 56
Present deficit	2,234 70

Dr.

To total deficit		2,234 70
	$11,941 60	$11,941 60

ILLINOIS STATE FAIR.

EXPENSES OF DEPARTMENTS FOR THE PAST FIVE YEARS.

	1878	1879	1880	1881	1882
Class A—Cattle	$71 53	$189 62	$137 63	$96 50	$89 21
B—Horses	139 79	342 93	187 23	132 66	137 84
C—Sheep	83 70	115 42	123 75	80 35	65 61
D—Swine	113 20	120 07	109 33	69 30	78 33
E—Poultry	61 31	92 15	97 68	85 98	84 23
F—Mechanics—Sec. 1	53 67	115 00	108 83	61 66	76 35
F—Mechanics—Sec. 2	143 83	206 58	189 42	244 85	126 50
G—Farm Products	53 58	132 20	143 47	116 31	126 11
H—Horticulture—Sec. 1	85 58	178 81	100 33	64 00	128 03
H—Horticulture—Sec. 2	70 00	143 10	88 32		
I—Fine Arts	88 00	85 30	58 25	36 33	64 58
K—Textile Fabrics	141 00	206 00	145 33	93 90	111 26
L—Natural History	....	53 25	32 25	30 83	60 50
N—Education	....	....	35 50	29 23	66 24
Marshal of Ring	121 25	169 83	153 16	101 00	136 66
General Superintendent	311 83	370 50	413 50	664 68	1,154 48
Auditing Committee	314 22	527 32	483 96	436 95	555 21
Secretary's office	215 80	230 71	129 16	183 75	420 54
Treasurer's office	249 33	277 00	169 33	267 83	265 83
President's office	30 33	185 17	183 90	160 66	167 75
Reception Committee	116 00	144 25	133 08	91 07	75 00
Committee of Arrangements	28 50	128 50	27 67	341 93	144 00
Forage Department	84 67	122 25	155 25	68 17	139 71

Respectfully submitted,

CHARLES SNOAD,
JOHN LANDRIGAN,
SAMUEL DYSART,

Auditing Committee.

The following preamble and resolution, introduced by Mr. Gillham, were,

On motion of Mr. Judy,

Adopted:

WHEREAS, The increasing danger to the cattle interests of this State and Nation from the introduction and extension of pleuro-pneumonia to the grazing grounds of the West and South, makes it of the utmost importance to the breeders and feeders of cattle, as well as consumers of beef and dairy products, that some effective means be adopted for the extinction of this disease; therefore be it

Resolved, That a committee of this Board be appointed to prepare a memorial, to be presented to the General Assembly of this State, now in session, and that a copy thereof be sent to the United States Senators and members of Congress from this State, praying for the enactment of such laws and appropriation of sufficient money to stamp out and permanently exclude from the United States pleuro-pneumonia or lung plague in cattle.

President appointed as said committee,
Messrs. Gillham, Dysart and Judy.

The Finance Committee made the following reports, which were received and adopted:

To the State Board of Agriculture:

Your committee, to whom was referred the report of the Treasurer of this Board, for the year ending January 3, 1883, would respectfully report that they have carefully examined the same, with accompanying vouchers, and find it correct.

Respectfully submitted,

D. E. BEATY.
B. PULLEN,
J. M. WASHBURN.

To the State Board of Agriculture:

The undersigned committee, to whom was referred the report of the Auditing Committee, have examined said report, and find that the vouchers presented have been duly certified by said committee, and that the amounts agree with the report of the Treasurer.

D. E. BEATY,
B. PULLEN,
J. M. WASHBURN,
Finance Committee.

The minutes of the day's session were read, and,
On motion of Mr. Beaty,
Adopted.

On motion of Mr. Judy,
The Board adjourned *sine die*.

J. R. SCOTT,
President.

S. D. FISHER,
Secretary

Reports from County Agricultural Boards.

The financial reports of the County Agricultural Boards, and other societies in this State, holding Fairs in 1882, are presented herewith.

The reports of the exhibitions in the various departments, and other matters usually published in connection with the reports, are tabulated, and follow the financial exhibits:

ADAMS COUNTY.

OFFICERS.—President, Geo. W. Dean, Camp Point; Secretary, Richard Seaton, Camp Point; Treasurer, Moses C. Welsh, Camp Point.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$1,759 73
" received in 1882, fees (gate and entrance)		4,425 20
" booth rents and permits		576 80
" received 1882, sale shares stock		10 00
" received 1882, State appropriation		100 00
" received 1882, other sources,		255 30
" paid 1882, in premiums	$2,767 50	
" paid 1882, for real estate, buildings and improvements	823 39	
" paid 1882, for current expenses other than premiums	963 00	
" paid 1882, on previous indebtedness		
" remaining in the treasury	2,573 14	
" deficit the current year		
Totals	$7,127 03	$7,127 03

BOONE COUNTY.

OFFICERS.—President, George Reed, Belvidere; Secretary, A. E. Jenner, Belvidere; Treasurer, C. H. Peck, Belvidere.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$2,239 05
" booth rents and permits		239 00
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources,		115 75
" paid 1882, in premiums	$1,106 50	
" paid 1882, for real estate, buildings and improvements	195 96	
" paid 1882, for current expenses other than premiums	1,234 18	
" paid 1882, on previous indebtedness	50 28	
" remaining in the treasury	106 88	
" deficit the current year		
Totals	$2,693 80	$2,693 80

BROWN COUNTY.

Officers.—President, Charles M. Dunlap, Mt. Sterling; Secretary, Geo. W. Curry, Mt. Sterling; Treasurer, S. D. Nokes, Mound Station.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$2,845 62
" booth rents and permits		354 00
" received 1882, sale shares stock		899 07
" received 1882, State appropriation		100 00
" received 1882, other sources		203 00
" paid 1882, in premiums	$2,368 25	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	895 30	
" paid 1882, on previous indebtedness	757 82	
" remaining in the treasury	380 32	
" deficit the current year		
Totals	$4,401 69	$4,401 69

BUREAU COUNTY.

Officers.—President, Geo. N. Palmer, Princeton; Secretary, C. P. Bascom, Princeton; Treasurer, H. M. Trimble, Princeton.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$51 77
" received in 1882, fees (gate and entrance)		4,102 65
" booth rents and permits		391 50
" received 1882, sales shares stock		30 00
" received 1882, State appropriation		100 00
" received 1882, other sources		415 52
" paid 1882, in premiums	$2,947 00	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	1,272 74	
" paid 1882, on previous indebtedness	836 10	
" remaining in the treasury	35 60	
" deficit the current year		
Totals	$5,091 41	$5,091 44

CARROLL COUNTY.

Officers.—President, Elijah Bailey, Mt. Carroll; Secretary, Don R. Frazer, Mt. Carroll; Treasurer, J. S. Miles, Mt. Carroll.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$153 76
" received in 1882, fees (gate add entrance)		2,089 08
" booth rents and permits		581 33
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		106 95
" paid 1882, in premiums	$1,493 26	
" paid 1882, for real estate, buildings and improvements	500 00	
" paid 1882, for current expenses other than premiums	850 00	
" paid 1882, on previous indebtedness		
" remaining in the treasury	187 86	
" deficit the current year		
Totals	$3,031 12	$3,031 12

CASS COUNTY.

Officers.—President, John M. Epler, Little Indian; Secretary, Geo. L. Marlow, Virginia; Treasurer, Geo. Conover, Virginia.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$1,097 00
" booth rents and permits		163 50
" received 1882, sale shares stock		178 10
" received 1882, State appropriation		100 00
" received 1882, other sources		719 29
" paid 1882, premiums	$1,770 60	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	487 29	
" paid 1882, on previous indebtedness		
" remaining in the treasury		
" deficit the current year		
Totals	$2,257 89	$2,257 89

CHAMPAIGN COUNTY.

Officers.—President, E. E. Chester, Champaign; Secretary, E. L. Dunlap, Savoy; Treasurer, C. F. Columbia, Champaign.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$2,186 60
" booth rents and permits		175 00
" received 1882, sale shares stock		1,060 00
" received 1882, State appropriation		100 00
" received 1882, other sources		162 80
" paid 1882, in premiums	$1,453 50	
" paid 1882, for real estate, buildings and improvements	1,155 50	
" paid 1882, for current expenses other than premiums	375 40	
" paid 1882, on previous indebtedness	560 00	
" remaining in the treasury	140 00	
" deficit the current year		
Totals	$3,684 40	$3,684 40

CLARK COUNTY.

Officers.—President, Thos. W. Cole, Marshall; Secretary, Walter Bartlett, Marshall; Treasurer, Milo Jones, Marshall.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		26 00
" received in 1882, fees (gate and entrance)		$00 00
" booth rents and permits		528 00
" received 1882, sale shares of stock		
" received 1882, State appropriation		
" received 1882, other sources		
" paid 1882, in premiums	$123 80	
" paid 1882, for real estate, buildings and improvements	191 54	
" paid 1882, for current expenses other than premiums	232 67	
" paid 1882, on previous indebtedness		
" remaining in the treasury	5 99	
" deficit the current year		
Totals	$554 00	$554 00

CLAY COUNTY.

Officers.—President, J. R. Tanner, Louisville; Secretary, W. R. Eaton, Flora; Treasurer, Miss Dora Rider, Flora.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$15 42
" received in 1882, fees (gate and entrance)		1,660 03
" booth rents and permits		680 25
" received 1882, sale shares stock		50 00
" received 1882, State appropriation		
" received 1882, other sources		100 95
" paid 1882, in premiums	$1,577 70	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	806 63	
" paid 1882, on previous indebtedness	98 70	
" remaining in the treasury	23 62	
" deficit the current year		
Totals	$2,506 65	$2,506 65

COLES COUNTY.

Officers.—President, Wm. Miller, Mattoon; Secretary, R. S. Hodgen, Charleston; Treasurer, J. K. Duker, Charleston.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$3,225 51
" booth rents and permits		350 05
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		185 20
" paid 1882, in premiums	$1,997 00	
" paid 1882, for real estate, buildings and improvements	1,300 00	
" paid 1882, for current expenses other than premiums	496 05	
" paid 1882, on previous indebtedness	237 68	
" remaining in the treasury		
" deficit the current year		169 97
Totals	$4,030 73	$4,030 73

CRAWFORD COUNTY.

Officers.—President, L. E. Stephens, Robinson; Secretary, L. V. Chaffee, Robinson; Treasurer, Wm. Parker, Robinson.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$214 10
" received in 1882, fees (gate and entrance)		1,553 75
" booth rents and permits		361 50
" received 1882, sale shares stock		
" received 1882, State appropriation		
" received 1882, other sources		
" paid 1882, in premiums	$1,139 50	
" paid 1882, for real estate, buildings and improvements	355 00	
" paid 1882, for current expenses other than premiums	400 00	
" paid 1882, on previous indebtedness	100 00	
" remaining in the treasury	134 85	
" deficit the current year		
Totals	$2,129 25	$2,129 35

DEKALB COUNTY—Sycamore.

OFFICERS.—President, Hiram Holcomb, Sycamore; Secretary, B. F. Wyman, Sycamore; Treasurer, A. W. Townsend, Sycamore.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$1,177 00
" booth rents and permits		213 00
" received 1882, sale shares of stock		
" received 1882, State appropriation		50 00
" received 1882, other sources		110 00
" paid 1882, in premiums	$552 00	
" paid 1882, for real estate, buildings and improvements	200 00	
" paid 1882, for current expenses other than premiums	519 44	
" paid 1882, on previous indebtedness	155 55	
" remaining in the treasury	123 01	
" deficit the current year		
Totals	$1,550 00	$1,550 00

DEKALB COUNTY—Sandwich.

OFFICERS.—President, J. P. Adams, Sandwich; Secretary, H. C. Graves, Sandwich; Treasurer, M. B. Castle, Sandwich.

FINANCIAL EXHIBIT FOR 1882

Amount in treasury, last report		$37 44
" received in 1882, fees (gate and entrance)		2,166 65
" booth rents and permits		
" received 1882, sale shares of stock		
" received 1882, State appropriation		50 00
" received 1882, other sources		17 56
" paid 1882, in premiums	$1,078 95	
" paid 1882, for real estate, buildings and improvements	809 84	
" paid 1882, for current expenses other than premiums	382 86	
" paid 1882, on previous indebtedness		
" remaining in the treasury		
" deficit the current year		
Totals	$2,271 65	$2,271 65

DEWITT COUNTY.

OFFICERS.—President, James A. Wilson, Clinton; Secretary, W. B. Rundle, Clinton; Treasurer, M. R. Colwell, Clinton.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$23 58
" received in 1882, fees (gate and entrance)		1,708 60
" booth rents and permits		684 00
" received 1882, sale shares of stock		70 00
" received 1882, State appropriation		100 00
" received 1882, other sources		17 00
" paid 1882, in premiums	$1,116 25	
" paid 1882, for real estate, buildings and improvements	400 00	
" paid 1882, for current expenses other than premiums	1,059 46	
" paid 1882, on previous indebtedness	68 00	
" remaining in the treasury		
" deficit the current year		40 53
Totals	$2,643 71	$2,643 71

DOUGLAS COUNTY.

Officers.—President, Isaac Cosler, Arcola; Secretary, Simeon Paddleford, Tuscola; Treasurer, Wm. R. Johnson, Tuscola.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$41 85
" received in 1882, fees (gate and entrance)		1,068 48
" booth rents and permits		254 18
" received 1882, sale shares stock.		
" received 1882, State appropriation		100 00
" received 1882, other sources,		
" paid 1882, in premiums.	$793 15	
" paid 1882, for real estate, buildings and improvements	100 00	
" paid 1882 for current expenses other than premiums	150 00	
" paid 1882, on previous indebtedness	413 33	
" remaining in the treasury	8 03	
" deficit the current year		
Totals	$1,464 51	$1,464 51

DuPAGE COUNTY.

Officers.—President, W. M. Crampton, Naperville; Secretary, A. D. Kelley, Wheaton; Treasurer, Amos Churchill, Lombard.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$51 20
" received in 1882, fees (gate and entrance)		507 50
" booth rents and permits		30 50
" received 1882, sale shares of stock		34 00
" received 1882, State appropriation		100 00
" received 1882, other sources		56 80
" paid 1882, in premiums	$594 50	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	152 22	
" paid 1882, on previous indebtedness	28 00	
" remaining in the treasury	5 28	
" deficit the current year		
Totals	$780 00	$780 00

EDGAR COUNTY.

Officers.—President, W. O. Wilson, Paris; Secretary, H. B. Adams, Paris; Treasurer, Leroy Wiley, Paris.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$844 69
" received in 1882, fees (gate and entrance)		3,119 82
" booth rents and permits		304 00
" received 1882, sale shares of stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		870 00
" paid 1882, in premiums	$2,547 00	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	745 33	
" paid 1882, on previous indebtedness.		
" remaining in the treasury	1,946 18	
" deficit the current year		
Totals	$5,238 51	$5,238 51

EDWARDS COUNTY.

Officers.—President, Joseph Skeavington, Albion; Secretary, Morris Emerson, Albion; Treasurer, George Weaver, Albion.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$365 90
" received in 1882, fees (gate and entrance)		2,020 15
" booth rents and permits		300 00
" received 1882, sale shares stock		114 00
" received 1882, State appropriation		100 00
" received 1882, other sources		5 79
" paid 1882, in premiums	$1,491 00	
" paid 1882, for real estate, buildings and improvements	300 00	
" paid 1882, for current expenses other than premiums	546 31	
" paid 1882, on previous indebtedness		
" remaining in the treasury	568 53	
" deficit the current year		
Totals	$2,905 84	$2,905 84

EFFINGHAM COUNTY.

Officers.—President, W. C. Wright, Effingham; Secretary, Geo. M. LeCrone, Effingham; Treasurer, A. Grovenhorst, Effingham.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$786 65
" received in 1882, fees (gates and entrance)		260 00
" booth rents and permits		
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		
" paid 1882, in premiums	$913 25	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	333 40	
" paid 1882, on previous indebtedness	100 00	
" remaining in the treasury		
" deficit the current year		200 00
Totals	$1,346 65	$1,346 65

FAYETTE COUNTY.

Officers.—President, M. F. Houston, Vandalia; Secretary, Chas. H. Smith, Vandalia; Treasurer, S. Perkins, Vandalia.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$958 25
" booth rents and permits		
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		
" paid 1882, in premiums	$368 50	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	564 04	
" paid 1882, on previous indebtedness		
" remaining in the treasury	125 71	
" deficit the current year		
Totals	$1,058 25	$1,058 25

FRANKLIN COUNTY.

Officers.—President, William A. King, Benton, Secretary; J. W. Hill, Jr., Benton; Treasurer, A. D. Jackson, Benton.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$2,100 50
" booth rents and permits		340 35
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		
" paid 1882, in premiums	$1,592 50	
" paid 1882, for real estate, buildings and improvements	302 35	
" paid 1882, for current expenses other than premiums	240 00	
" paid 1882, on previous indebtedness	256 00	
" remaining in the treasury	150 00	
" deficit the current year		
Totals	$2,540 85	$2,540 85

FULTON COUNTY.

Officers.—President, D. H. Gorham, Avon; Secretary, A. J. Churchill, Avon; Treasurer, F. M. Nance, Avon.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$433 88
" received in 1882, fees (gate and entrance)		2,631 95
" booth rents and permits		376 75
" received 1882, sale shares stock		
" received 1882, State appropriation		50 00
" received 1882, other sources		153 60
" paid 1882, in premiums	$2,161 00	
" paid 1882, for real estate, buildings and improvements	156 84	
" paid 1882, for current expenses other than premiums	972 09	
" paid 1882, on previous indebtedness		
" remaining in the treasury	356 25	
" deficit the current year		
Totals	$3,646 18	$3,646 18

GALLATIN COUNTY.

Officers.—President, M. M. Pool, Shawneetown; Secretary, J. L. Robinson, Shawneetown; Treasurer, J. E. Richeson, Shawneetown.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$250 00
" received in 1882, fees (gate and entrance)		2,518 05
" booth rents and permits		505 00
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		
" paid 1882, in premiums	$2,448 00	
" paid 1882, for real estate, buildings and improvements	481 00	
" paid 1882, for current expenses other than premiums	469 05	
" paid 1882, on previous indebtedness		
" remaining in the treasury	5 00	
" deficit the current year		
Totals	$3,403 05	$3,403 05

GREENE COUNTY.

Officers.—President, C. I. McCollister, Whitehall; Secretary, N. J. Andrews, Carrollton; Treasurer, L. S. Eldred, Carrollton.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		$434 96
" received in 1882, fees (gate and entrance)		3,705 50
" booth rents and permits		475 40
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		608 37
" paid 1882, in premiums	$2,393 50	
" paid 1882, for real estate, buildings and improvements	242 12	
" paid 1882, for current expenses other than premiums	2,213 95	
" paid 1882, on previous indebtedness	132 15	
" remaining in the treasury	342 51	
" deficit the current year		
Totals	$5,324 23	$5,324 23

HAMILTON COUNTY.

Officers.—President, Wm. A. Coker, McLeansboro; Secretary, Walter A. McElvain, McLeansboro; Treasurer, Chalon G. McCoy, McLeansboro.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		$86 82
" received in 1882, fees (gate and entrance)		2,139 65
" booth rents and permits		960 65
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		
" paid 1882, in premiums	$1,151 00	
" paid 1882, for real estate, buildings and improvements	200 00	
" paid 1882, for current expenses other than premiums	692 33	
" paid 1882, on previous indebtedness	1,080 00	
" remaining in the treasury	163 79	
" deficit the current year		
Totals	$3,287 12	$3,287 12

HANCOCK COUNTY—Carthage.

Officers.—President, Eli W. Bennett, Chili; Secretary, O. F. Berry, Carthage; Treasurer, Ed. M. Robbins, Carthage.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$4,655 70
" booth rents and permits		298 00
" received 1882, sale shares stock		6,603 40
" received 1882, State appropriation		
" received 1882, other sources		164 00
" paid 1882, in premiums	$1,838 75	
" paid 1882, for real estate, buildings and improvements	7,087 18	
" paid 1882, for current expenses other than premiums	1,425 30	
" paid 1882, on previous indebtedness		
" remaining in the treasury	1,369 87	
" deficit the current year		
Totals	$11,721 10	$11,721 10

HANCOCK COUNTY—Warsaw.

Officers.—President, Isaac Bliss, Warsaw; Secretary, James T. Johnson, Warsaw; Treasurer, James B. Dodge, Warsaw.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		$586 00
" received in 1882, fees (gateand entrance)		1,701 00
" booth rents and permits		200 00
" received 1882, sale shares stock		3,200 00
" received 1882, State appropriation		
" received 1882, other sources		
" paid 1882, in premiums	$886 75	
" paid 1882, for real estate, buildings and improvements	4,300 00	
" paid 1882, for current expenses other than premiums	300 00	
" paid 1882, on previous indebtedness		
" remaining in the treasury	200 25	
" deficit the current year		
Total	$5,687 00	$5,687 00

HARDIN COUNTY.

Officers.—President, R. P. Hetherington, Elizabethtown; Secretary, L. F. Twitchell, Elizabethtown; Treasurer, T. A. McAmis..

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$1,004 95
" booth rents and permits		167 50
" received 1882, sale shares stock		
" received 1882, State appropriation		
" received 1882, other sources		
" paid 1882, in premiums	$725 65	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	305 76	
" paid 1882, on previous indebtedness		
" remaining in the treasury	141 04	
" deficit the current year		
Total	$1,172 45	$1,172 45

HENDERSON COUNTY.

Officers.—President, Paul D. Salter, Kirkwood; Secretary, R. A. McKinley, Biggsville; Treasurer, George M. Dill, Biggsville.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$1,251 10
" booth rents and permits		245 75
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		223 75
" paid 1882, in premiums	$1,261 25	
" paid 1882, for real estate, buildings and improvements	80 00	
" paid 1882, for current expenses other than premiums	385 00	
" paid 1882, on previous indebtedness	94 35	
" remaining in the treasury		
" deficit the current year		
Total	$1,820 60	$1,820 60

HENRY COUNTY.

OFFICERS.—President, N. C. Gilbert, Geneseo; Secretary, R. H. Hinman, Cambridge, Treasurer; W. H. Shepard, Cambridge.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report.		$15 95
received in 1882, fees (gate and entrance)		3,164 70
booth rents and permits		429 60
received 1882, sale shares of stock		
received 1882, State appropriation		100 00
received 1882, other sources		256 93
paid, 1882, in premiums	$3,119 75	
paid 1882, for real estate, buildings and improvements	289 92	
paid 1882, for current expenses other than premiums	557 71	
paid 1882, on previous indebtedness		
remaining in the treasury		
deficit the current year		45
Totals.	$3,967 63	$3,967 63

IROQUOIS COUNTY.

OFFICERS.—President, Daniel Fry, Watseka; Secretary, Robert Hayes, Watseka; Treasurer, John W. Riggs, Watseka.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
‘‘ received in 1882, fees (gate and entrance)		$1,149 25
‘‘ booth rents and permits		563 25
‘‘ received 1882, sale shares of stock		
‘‘ received 1882, State appropriation		100 00
‘‘ received 1882, other sources		5 00
‘‘ paid 1882, in premiums	$1,183 00	
‘‘ paid 1882, for real estate, buildings and improvements	396 46	
‘‘ paid 1882, for current expenses other than premiums	238 04	
‘‘ paid 1882, on previous indebtedness		
‘‘ remaining in the treasury		
‘‘ deficit the current year		
Totals	$1,817 50	$1,817 50

JACKSON COUNTY—Murphysboro.

OFFICERS.—President, G. G. Will, Murphysboro; Secretary, S. H. Winans, Murphysboro; Treasurer, Edward Worthen, Murphysboro.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
‘‘ received in 1882, fees (gate and entrance)		$799 75
‘‘ booth rents and permits		203 30
‘‘ received 1882, sale shares of stock		
‘‘ received 1882, State appropriation		50 00
‘‘ received 1882, other sources		60 30
‘‘ paid 1882, in premiums	$891 00	
‘‘ paid 1882, for real estate, buildings and improvements	180 80	
‘‘ paid 1882, for current expenses other than premiums	83 25	
‘‘ paid 1882, on previous indebtedness	70 00	
‘‘ remaining in treasury		
‘‘ deficit the current year		111 70
Totals	$1,225 05	$1,225 05

JACKSON COUNTY—Carbondale.

OFFICERS.—President, James M. Scurlock, Carbondale; Secretary, S. T. Brush, Carbondale; Treasurer, Theo. K. Mackey, Carbondale.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$175 68
" received in 1882, fees (gate and entrance)		2,658 43
" booth rents and permits		342 00
" received 1882, sale shares stock		
" received 1882, State appropriation		50 00
" received 1882, other sources		81 00
" paid 1882, in premiums	$2,102 50	
" paid 1882, for real estate, buildings and improvements	240 70	
" paid 1882, for current expenses other than premiums	468 93	
" paid 1882, on previous indebtedness		
" remaining in the treasury	494 98	
" deficit the current year		
Totals	$3,307 11	$3,307 11

JASPER COUNTY.

OFFICERS.—President, John Mason, Wheeler; Secretary, W. E. Barrett, Newton; Treasurer, Wm. Johnson, Newton.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$53 14
" received in 1882, fees (gate and entrance)		1,647 55
" booth rents and permits		419 00
" received 1882, sale shares stock		35 00
" received 1882, State appropriation		
" received 1882, other sources		75 25
" paid 1882, in premiums	$808 75	
" paid 1882, for real estate, buildings and improvements	329 65	
" paid 1882, for current expenses other than premiums	300 80	
" paid 1882, on previous indebtedness	615 89	
" remaining in the treasury	204 85	
" deficit the current year		
Totals	$2,259 94	$2,259 94

JEFFERSON COUNTY.

OFFICERS.—President, I. G. Gee, Fitzgerell; Secretary, John S. Bogan, Mt. Vernon; Treasurer, G. W. Evans, Mt. Vernon.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$3,046 85
" booth rents and permits		1,101 50
" received 1882, sale shares stock		
" received 1882, State appropriation		
" received 1882, other sources		989 09
" paid 1882, in premiums	$2,039 50	
" paid 1882, for real estate, buildings and improvements	835 94	
" paid 1882, for current expenses other than premiums	1,090 00	
" paid 1882, on previous indebtedness	959 69	
" remaining in the treasury	212 31	
" deficit the current year		
Totals	$5,137 44	$5,137 44

JERSEY COUNTY.

Officers.—President, Wm. H. Fulkerson, Jerseyville; Secretary, Morris R. Locke, Jerseyville; Treasurer, John A. Shepherd, Jerseyville.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$5,636 55
" booth rents and permits		792 50
" received 1882, sale shares stock		343 00
" received 1882, State appropriation		100 00
" received 1882, other sources		888 25
" paid 1882, in premiums	$3,813 00	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	2,824 24	
" paid 1882, on previous indebtedness	1,123 06	
" remaining in the treasury		
" deficit the current year		
Totals	$7,760 30	$7,760 30

JoDAVIESS COUNTY—Galena.

Officers.—President, George S. Avery, Galena; Secretary, Frank Bostwick, Galena; Treasurer, D. N. Corwith, Galena.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$1,400 90
" booth rents and permits		624 00
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		120 54
" paid 1882, in premiums	$1,290 00	
" paid 1882, for real estate, buildings and improvements	506 25	
" paid 1882, for current expenses other than premiums	449 19	
" paid 1882, on previous indebtedness		
" remaining in the treasury		
" deficit the current year		
Totals	$2,245 44	$2,245 44

JoDAVIESS COUNTY—Warren.

Officers.—President, R. Hawley, Warren; Secretary, Joseph Hicks, Warren; Treasurer, James Bayne, Warren.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$1,382 10
" booth rents and permits		164 00
" received 1882, sale shares stock		
" received 1882, State appropriation		50 00
" received 1882, other sources		53 86
" paid 1882, in premiums	$946 10	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	296 73	
" paid 1882, on previous indebtedness	381 75	
" remaining in the treasury	25 38	
" deficit the current year		
Totals	$1,649 96	$1,649 96

KANE COUNTY.

Officers.—President, H. H. Evans, Aurora; Secretary, W. S. Beaupre, Aurora; Treasurer, A. W. Stolp, Aurora.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		$78 35
'' received in 1882, fees (gate and entrance)		2,635 20
booth rents and permits		536 25
received 1882, sale shares stock		
received 1882, State appropriation		100 00
received 1882, other sources		14 00
pa'd 1882, in premiums	$2,423 50	
paid 1882, for real estate, buildings and improvements		
paid 1882, for current expenses other than premiums	808 33	
paid 1882, on previous indebtedness		
remaining in the treasury	131 97	
deficit the current year		
Total.	$3,363 80	$3,363 80

KANKAKEE COUNTY.

Officers.—President, Milo Barnard, Manteno; Secretary, H. S. Bloom, Kankakee; Treasurer, W. W. Todd, Kankakee.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		$359 19
'' received in 1882, fees (gate and entrance)		2,129 60
'' booth rents and permits		174 25
'' received 1882, sale shares stock		
'' received 1882, State appropriation		100 00
'' received 1882, other sources		60 00
'' paid 1882, in premiums	$1,610 95	
'' paid 1882, for real estate, buildings and improvements	451 08	
'' paid 1882, for current expenses other than premiums	729 32	
'' paid 1882, on previous indebtedness		
'' remaining in the treasury	31 69	
'' deficit the current year		
Total	$2,823 04	$2,823 04

KENDALL COUNTY.

Officers.—President, A. Welch, Yorkville; Secretary, Wm. Hill, Yorkville; Treasurer, George A. Godard, Yorkville.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
'' received 1882, fees (gate and entrance)		$1,169 50
'' booth rents and permits		50 00
'' received 1882, sale shares stock		
'' received 1882, State appropriation		100 00
'' received 1882, other sources		75 00
'' paid 1882, in premiums	$702 50	
'' paid 1882, for real estate, buildings and improvements	300 00	
'' paid 1882, for current expenses other than premiums	491 56	
'' paid 1882, on previous indebtedness		
'' remaining in the treasury		
'' deficit the current year		99 56
Total	$1,494 06	$1,494 06

KNOX COUNTY.

OFFICERS.—President, D. M. Eiker, Knoxville; Secretary, O. L. Campbell, Knoxville; Treasurer, J. B. Gault, Knoxville.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$2,111 00
" booth rents and permits		100 00
" received 1882, sale shares of stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		711 00
" paid 1882, in premiums	$1,400 00	
" paid 1882, for real estate, buildings and improvements	711 00	
" paid 1882, for current expenses other than premiums	186 00	
" paid 1882, on previous indebtedness	60 00	
" remaining in the treasury	665 00	
" deficit the current year		
Totals	$3,022 00	$3,022 00

LAKE COUNTY—Libertyville.

OFFICERS.—President, R. H. French, Libertyville; Secretary, C. F. Wright, Libertyville; Treasurer, L. E. Penniman, Libertyville.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		$26 76
" received in 1882, fees (gate and entrance)		894 35
" booth rents and permits		56 40
" received 1882, sale shares of stock		
" received 1882, State appropriation		
" received 1882, other sources		169 87
" paid 1882, in premiums	$650 00	
" paid 1882, for real estate, buildings and improvements	284 81	
" paid 1882, for current expenses other than premiums	163 15	
" paid 1882, on previous indebtedness		
" remaining in the treasury	49 42	
" deficit the current year		
Totals	$1,147 38	$1,147 38

LAKE COUNTY—Waukegan.

OFFICERS.—President, John F. Powell, Waukegan; Secretary, J. K. Bower, Waukegan; Treasurer, H. C. Hutchinson, Waukegan.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		$325 31
" received in 1882, fees (gate and entrance)		2,440 24
" booth rents and permits		289 00
" received 1882, sale shares of stock		50 00
" received 1882, State appropriation		100 00
" received 1882, other sources		150 00
" paid 1882, in premiums	$2,164 75	
" paid 1882, for real estate, buildings and improvements	567 95	
" paid 1882, for current expenses other than premiums	332 73	
" paid 1882, on previous indebtedness	480 00	
" remaining in the treasury		
" deficit the current year		190 88
Totals	$3,545 43	$3,545 43

LaSALLE COUNTY.

Officers.—President, A. C. McIntire, Mendota; Secretary, T. F. A. Newport, Mewport; Treasurer, Geo. H. Madden, Mendota.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
received in 1882, fees (gate and entrance)		$4,687 40
booth rents and permits		154 00
received 1882, sale shares of stock		6,225 00
received 1882, State appropriation		
[illegible]		[illegible]
" paid 1882, in premiums	$3,037 50	
" paid 1882, for real estate, buildings and improvements	5,807 66	
" paid 1882, for current expenses other than premiums	1,872 87	
" paid 1882, on previous indebtedness		
" remaining in the treasury	476 68	
" deficit the current year		
Totals	$11,194 71	$11,194 71

LIVINGSTON COUNTY—Fairbury.

Officers.—President, John Virgin, Fairbury; Secretary, Ed. Annable, Fairbury; Treasurer, L. B. Dominy, Fairbury.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$3,282 56
" booth rents and permits		265 50
" received 1882, sale shares of stock		
" received 1882, State appropriation		50 00
" received 1882, other sources		857 40
" paid 1882, in premiums	$2,385 50	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	1,057 22	
" paid 1882 on previous indebtedness	992 25	
" remaining in the treasury	20 49	
" deficit the current year		
Totals	$4,455 46	$4,455 46

LOGAN COUNTY—Lincoln.

Officers.—President, Joseph Beam, Lincoln; Secretary, T. H. Stokes, Lincoln; Treasurer, A. B. Nicholson, Lincoln.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$4,516 48
" booth rents and permits		377 50
" received 1882, sale shares of stock		112 50
" received 1882, State appropriation		50 00
" received 1882, other sources		200 00
" paid 1882, in premiums	$3,470 25	
" paid 1882, for real estate, buildings and improvements	650 00	
" paid 1882, for current expenses other than premiums	685 73	
" paid 1882, on previous indebtedness	450 50	
" remaining in treasury		
" deficit the current year		
Totals	$5,256 48	$5,256 48

LOGAN COUNTY—Atlanta.

Officers.—President, Ed. Stubblefield, McLean; Secretary, J. P. Hieronymus, Atlanta; Treasurer, Frank Hoblit, Atlanta.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$25 05
" received in 1882, fees (gate and entrance)		2,592 75
" booth rents and permits		276 00
" received 1882, sale shares stock		
" received 1882, State appropriation		50 00
" received 1882, other sources		465 75
" paid 1882, in premiums	$1,160 50	
" paid 1882, for real estate, buildings and improvements	123 36	
" paid 1882, for current expenses other than premiums	606 01	
" paid 1882, on previous indebtedness	1,484 00	
" remaining in the treasury	35 68	
" deficit the current year		
Totals	$3,409 55	$3,409 55

MACON COUNTY.

Officers.—President, J. G. Willard, Harristown; Secretary, C. M. Durfee, Decatur; Treasurer, M. B. Thomas, Decatur.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gates and entrance)		$2,691 19
" booth rents and permits		121 62
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		50 00
" paid 1882, in premiums	$2,056 06	
" paid 1882, for real estate, buildings and improvements	122 79	
" paid 1882, for current expenses other than premiums	738 04	
" paid 1882, on previous indebtedness	42 23	
" remaining in the treasury	3 69	
" deficit the current year		
Totals	$2,962 81	$2,962 81

MACOUPIN COUNTY.

Officers.—President, Joseph Bird, Carlinville; Secretary, F. W. Burton, Carlinville; Treasurer, Robert Bacon, Carlinville.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$816 14
" received in 1882, fees (gate and entrance)		2,411 05
" booth rents and permits		816 00
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		501 40
" paid 1882, in premiums	$2,253 50	
" paid 1882, for real estate, buildings and improvements	227 10	
" paid 1882, for current expenses other than premiums	1,369 45	
" paid 1882, on previous indebtedness	170 65	
" remaining in the treasury	623 89	
" deficit the current year		
Totals	$4,644 59	$4,644 59

MARION COUNTY—Salem.

Officers.—President, A. Coffin, Alma; Secretary, L. O. Vogt, Salem; Treasurer, S. Phelps, Salem.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$481 65
" booth rents and permits		377 50
" received 1882, sale shares stock		
" received 1882, State appropriation		
" received 1882, other sources		181 45
" paid 1882, in premiums	$747 40	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	281 40	
" paid 1882, on previous indebtedness		
" remaining in the treasury	11 80	
" deficit the current year		
Totals	$1,040 60	$1,040 60

MARION COUNTY—Centralia.

Officers.—President, M. C. Kell, Centralia; Secretary, S. A. Frazier, Centralia; Treasurer, F. Kohl, Centralia.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$141 22
" received in 1882, fees (gate and entrance)		1,679 60
" booth rents and permits		692 50
" received 1882, sale shares stock		
" received 1882, State appropriation		
" received 1882, other sources		353 33
" paid 1882, in premiums	$1,529 65	
" paid 1882, for real estate, buildings and improvements	469 65	
" paid 1882, for current expenses other than premiums	796 35	
" paid 1882, on previous indebtedness		
" remaining in the treasury	71 00	
" deficit the current year		
Totals	$2,866 65	$2,866 65

MARSHALL COUNTY.

Officers.—President, W. H. H. Holdridge, Tonica; Secretary, Geo. G. McAdam, Wenona; Treasurer, E. P. Baker, Wenona.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$55 76
" received in 1882, fees (gate and entrance)		5,754 50
" booth rents and permits		554 50
" received 1882, sale shares stock		155 72
" received 1882, State appropriation		
" received 1882, other sources		2,073 38
" paid 1882, in premiums	$4,319 50	
" paid 1882, for real estate, buildings and improvements	1,585 18	
" paid 1882, for current expenses other than premiums	2,689 18	
" paid 1882, on previous indebtedness		
" remaining in the treasury		
" deficit the current year		
Totals	$8,593 86	$8,593 86

MASON COUNTY.

Officers.—President, W. S. Dray, Havana; Secretary, S. F. Kyle, Havana; Treasurer, Thomas Covington, Havana.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$867 55
" booth rents and permits		253 50
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		
" paid 1882, in premiums	$685 20	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	955 20	
" paid 1882, on previous indebtedness		
" remaining in the treasury		
" deficit the current year		419 35
Totals	$1,640 40	$1,640 40

MASSAC COUNTY.

Officers.—President, J. C. Willis, Metropolis; Secretary, J. M. Stone, Metropolis; Treasurer, A. D. Davis, Metropolis.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$792 60
" received in 1882, fees (gate and entrance)		378 55
" booth rents and permits		
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		109 90
" paid 1882, in premiums	$465 25	
" paid 1882, for real estate, buildings and improvements	737 40	
" paid 1882, for current expenses other than premiums	104 00	
" paid 1882, on previous indebtedness	43 85	
" remaining in the treasury	30 55	
" deficit the current year		
Totals	$1,381 05	$1,381 05

McDONOUGH COUNTY.

Officers.—President, W. O. Blaisdell, Macomb; Secretary, I. M. Fellheimer, Macomb; Treasurer, I. N. Pearson, Macomb.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$52 54
" received in 1882, fees (gate and entrance)		1,701 50
" booth rents and permits		668 61
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		1,637 04
" paid 1882, in premiums	$2,099 35	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	747 57	
" paid 1882, on previous indebtedness	1,153 09	
" remaining in the treasury	159 68	
" deficit the current year		
Totals	$4,159 69	$4,159 69

McHENRY COUNTY—Woodstock.

Officers.—President, Thos. McD. Richards, Woodstock; Secretary, A. S. Wright, Woodstock; Treasurer, A. L. Salisbury, Woodstock.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$4,001 43
" booth rents and permits		393 00
" received 1882, sale shares stock		
" received 1882, State appropriation		
" received 1882, other sources		
" paid 1882, premiums	$2,335 00	
" paid 1882, for real estate, buildings and improvements	2,000 00	
" paid 1882, for current expenses other than premiums	1,414 19	
" paid 1882, on previous indebtedness		
" remaining in the treasury		
" deficit the current year		1,154 76
Totals	$5,749 19	$5,749 19

McHENRY COUNTY—Marengo.

Officers.—President, L. W. Sheldon, Marengo; Secretary, J. S. Rogers, Marengo; Treasurer, S. K. Bartholomew, Marengo.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$1,976 48
" booth rents and permits		230 30
" received 1882, sale shares stock		
" received 1882, State appropriation		
" received 1882, other sources		62 50
" paid 1882, in premiums	$1,216 25	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	574 64	
" paid 1882, on previous indebtedness	132 00	
" remaining in the treasury	346 39	
" deficit the current year		
Totals	$2,269 28	$2,269 28

MERCER COUNTY.

Officers.—President, A. B. Swisher, Eliza; Secretary, J. F. Henderson, Aledo; Treasurer, E. B. David, Aledo.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		$441 92
" received in 1882, fees (gate and entrance)		3,246 13
" booth rents and permits		750 16
" received 1882, sale shares of stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		1,841 15
" paid 1882, in premiums	$2,034 85	
" paid 1882, for real estate, buildings and improvements	3,290 97	
" paid 1882, for current expenses other than premiums	799 79	
" paid 1882, on previous indebtedness		
" remaining in the treasury	253 75	
" deficit the current year		
Totals	$6,379 36	$6,379 36

MONTGOMERY COUNTY.

Officers.—President, Moses Berry, Butler; Secretary and Treasurer, Wm. K. Jackson, Hillsboro.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$1,186 00
" booth rents and permits		128 00
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources,		86 00
" paid 1882, in premiums	$736 00	
" paid 1882, for real estate, buildings and improvements	171 33	
" paid 1882, for current expenses other than premiums	592 67	
" paid 1882, on previous indebtedness		
" remaining in the treasury		
" deficit the current year		
Totals	$1,500 00	$1,500 00

MORGAN COUNTY.

Officers.—President, F. M. Morton, Jacksonville; Secretary, J. M. Dunlap, Jacksonville; Treasurer, Marcus Hook, Jacksonville.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$6,055 65
" booth rents and permits		871 00
" received 1882, sale shares of stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		117 15
" paid 1882, in premiums	$5,396 50	
" paid 1882, for real estate, buildings and improvements	738 69	
" paid 1882, for current expenses other than premiums	2,019 47	
" paid 1882, on previous indebtedness		
" remaining in the treasury		
" deficit the current year		1,010 8
Totals	$8,154 66	$8,154 6

MOULTRIE COUNTY.

Officers.—President, John T. Howell, Lovington; Secretary, S M. Smyser, Sullivan; Treasurer, A. E. D. Scott, Sullivan.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$400
" booth rents and permits		150
" received 1882, sale shares of stock		
" received 1882, State appropriation		
" received 1882, other sources		250
" paid 1882, in premiums	$500 00	
" paid 1882, for real estate, buildings and improvements	250 00	
" paid 1882, for current expenses other than premiums		
" paid 1882, on previous indebtedness	50 00	
" remaining in the treasury		
" deficit the current year		
Totals	$800 00	$800

OGLE COUNTY—Oregon.

OFFICERS.—President, Simon Sheaff, Holcomb; Secretary, Henry P. Lason, Oregon; Treasurer, John B. Seibert, Oregon.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$2,812 86
" booth rents and permits		531 25
" received 1882, sale shares of stock		350 00
" received 1882, State appropriation		100 00
" received 1882, other sources		314 97
" paid 1882, in premiums	$1,778 00	
" paid 1882, for real estate, buildings and improvements	1,476 25	
" paid 1882, for current expenses other than premiums	857 56	
" paid 1882, on previous indebtedness		
" remaining in the treasury		
" deficit the current year		2 73
Totals	$4,111 81	$4,111 81

PERRY COUNTY.

OFFICERS.—President, Wm. K. Murphy, Pinckneyville; Secretary, Edwin H. Lemen, Pinckneyville; Treasurer, R. G. Williams, Pinckneyville.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$887 47
" received in 1882, fees (gate and entrance)		2,575 00
" booth rents and permits		737 65
" received 1882, sale shares of stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		
" paid 1882, in premiums	$1,454 50	
" paid 1882, for real estate, buildings and improvements	964 30	
" paid 1882, for current expenses other than premiums	800 90	
" paid 1882, on previous indebtedness		
" remaining in the treasury	1,080 42	
" deficit the current year		
Totals	$4,300 12	$4,300 12

PIATT COUNTY.

OFFICERS.—President, Jesse W. Warner, Monticello; Secretary, C. A. Tatman, Monticello; Treasurer, H. V. Moore, Monticello

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$2,164 02
" received in 1882, fees (gate and entrance)		3,196 47
" booth rents and permits		1,030 00
" received 1882, sale shares of stock		40 00
" received 1882, State appropriation		100 00
" received 1882, other sources		51 00
" paid 1882, in premiums	$1,149 00	
" paid 1882, for real estate, buildings and improvements	2,641 41	
" paid 1882, for current expenses other than premiums	1,158 46	
" paid 1882, on previous indebtedness		
" remaining in the treasury	1,632 62	
" deficit the current year		
Totals	$6,581 49	$6,581 49

MONTGOMERY COUNTY.

Officers.—President, Moses Berry, Butler; Secretary and Treasurer, Wm. K. Jackson, Hillsboro.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$1,186 00
" booth rents and permits		128 00
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		86 00
" paid 1882, in premiums	$736 00	
" paid 1882, for real estate, buildings and improvements	171 33	
" paid 1882, for current expenses other than premiums	592 67	
" paid 1882, on previous indebtedness		
" remaining in the treasury		
" deficit the current year		
Totals	$1,500 00	$1,500 00

MORGAN COUNTY.

Officers.—President, F. M. Morton, Jacksonville; Secretary, J. M. Dunlap, Jacksonville; Treasurer, Marcus Hook, Jacksonville.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$6,055 65
" booth rents and permits		871 00
" received 1882, sale shares of stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		117 15
" paid 1882, in premiums	$5,396 50	
" paid 1882, for real estate, buildings and improvements	738 69	
" paid 1882, for current expenses other than premiums	2,019 47	
" paid 1882, on previous indebtedness		
" remaining in the treasury		
" deficit the current year		1,010 86
Totals	$8,154 66	$8,154 66

MOULTRIE COUNTY.

Officers.—President, John T. Howell, Lovington; Secretary, S. M. Smyser, Sullivan; Treasurer, A. E. D. Scott, Sullivan.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$400 00
" booth rents and permits		150 00
" received 1882, sale shares of stock		
" received 1882, State appropriation		
" received 1882, other sources		250 00
" paid 1882, in premiums	$500 00	
" paid 1882, for real estate, buildings and improvements	250 00	
" paid 1882, for current expenses other than premiums		
" paid 1882, on previous indebtedness	50 00	
" remaining in the treasury		
" deficit the current year		
Totals	$800 00	$800 00

OGLE COUNTY—Oregon.

Officers.—President, Simon Sheaff, Holcomb; Secretary, Henry P. Lason, Oregon; Treasurer, John B. Seibert, Oregon.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$2,812 86
" booth rents and permits		531 25
" received 1882, sale shares of stock		350 00
" received 1882, State appropriation		100 00
" received 1882, other sources		314 97
" paid 1882, in premiums	$1,778 00	
" paid 1882, for real estate, buildings and improvements	1,476 25	
" paid 1882, for current expenses other than premiums	857 56	
" paid 1882, on previous indebtedness		
" remaining in the treasury		
" deficit the current year		2 73
Totals	$4,111 81	$4,111 81

PERRY COUNTY.

Officers.—President, Wm. K. Murphy, Pinckneyville; Secretary, Edwin H. Lemen, Pinckneyville; Treasurer, R. G. Williams, Pinckneyville.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$887 47
" received in 1882, fees (gate and entrance)		2,575 00
" booth rents and permits		737 65
" received 1882, sale shares of stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		
" paid 1882, in premiums	$1,454 50	
" paid 1882, for real estate, buildings and improvements	964 30	
" paid 1882, for current expenses other than premiums	800 90	
" paid 1882, on previous indebtedness		
" remaining in the treasury	1,080 42	
" deficit the current year		
Totals	$4,300 12	$4,300 12

PIATT COUNTY.

Officers.—President, Jesse W. Warner, Monticello; Secretary, C. A. Tatman, Monticello; Treasurer, H. V. Moore, Monticello.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$2,164 02
" received in 1882, fees (gate and entrance)		3,196 47
" booth rents and permits		1,030 00
" received 1882, sale shares of stock		40 00
" received 1882, State appropriation		100 00
" received 1882, other sources		51 00
" paid 1882, in premiums	$1,149 00	
" paid 1882, for real estate, buildings and improvements	2,641 41	
" paid 1882, for current expenses other than premiums	1,158 46	
" paid 1882, on previous indebtedness		
" remaining in the treasury	1,632 62	
" deficit the current year		
Totals	$6,581 49	$6,581 49

PIKE COUNTY.

OFFICERS.—President, J. M. Bush, Pittsfield; Secretary, J. H. Crane, Pittsfield; Treasurer, I. N. McClintock, Pittsfield.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$93 01
" received in 1882, fees (gate and entrance)		3,114 35
" booth rents and permits		784 25
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		619 35
" paid 1882, in premiums	$2,169 50	
" paid 1882, for real estate, buildings and improvements	1,252 60	
" paid 1882, for current expenses other than premiums	1,024 86	
" paid 1882, on previous indebtedness	264 00	
" remaining in the treasury		
" deficit the current year		
Totals	$4,710 96	$4,710 96

POPE COUNTY.

OFFICERS.—President, William S. Hodge, Golconda; Secretary, J. E. Y. Hanna, Golconda; Treasurer, Wm. P. Sloan, Golconda.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$340 20
" received in 1882, fees (gate and entrance)		1,293 90
" booth rents and permits		212 00
" received 1882, sales shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		
" paid 1882, in premiums	$699 20	
" paid 1882, for real estate, buildings and improvements	180 00	
" paid 1882, for current expenses other than premiums	246 80	
" paid 1882, on previous indebtedness	340 20	
" remaining in the treasury	479 90	
" deficit the current year		
Totals	$1,946 10	$1,946 10

RANDOLPH COUNTY—Sparta.

OFFICERS.—President, E. B. McGuire, Sparta; Secretary, John G. Taylor, Sparta; Treasurer, C. C. Hyndman, Sparta.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$1,498 35
" booth rents and permits		186 25
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		51 00
" paid 1882, in premiums	$1,117 00	
" paid 1882, for real estate, buildings and improvements	150 00	
" paid 1882, for current expenses other than premiums	568 60	
" paid 1882, on previous indebtedness		
" remaining in the treasury		
" deficit the current year		
Totals	$1,835 60	$1,835 60

RANDOLPH COUNTY—Chester.

Officers.—President, Wm. A. Gordon, Chester; Secretary, Wm. Schuchert, Chester; Treasurer, Isaac Lehnherr, Chester.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$315 85
" received in 1882, fees (gate and entrance)		2,984 30
" booth rents and permits		780 75
" received 1882, sale shares stock		
" received 1882, State appropriation		
" received 1882, other sources		55 00
" paid 1882, in premiums	$1,999 50	
" paid 1882, for real estate, buildings and improvements	175 00	
" paid 1882, for current expenses other than premiums	619 60	
" paid 1882, on previous indebtedness		
" remaining in the treasury	1,341 80	
" deficit the current year		
Totals	$4,135 90	$4,135 90

RICHLAND COUNTY.

Officers.—President, Isaac Welty, Olney; Secretary, W. F. Beck, Olney; Treasurer, W. C. Rickard, Olney.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$520 29
" received in 1882, fees (gate and entrance)		2,135 40
" booth rents and permits		1,047 75
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		
" paid 1882, in premiums	$1,785 25	
" paid 1882, for real estate, buildings and improvements	520 29	
" paid 1882, for current expenses other than premiums	1,355 03	
" paid 1882, on previous indebtedness		
" remaining in the treasury	142 87	
" deficit the current year		
Totals	$3,803 44	$3,803 44

ROCK ISLAND COUNTY—Port Byron.

Officers.—President, A. F. Hollister, Port Byron; Secretary, L. S. Pearsall, Port Byron; Treasurer, M. Ashdown, Port Byron.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$38 50
" received in 1882, fees (gate and entrance)		762 60
" booth rents and permits		205 00
" received 1882, sale shares stock		
" received 1882, State appropriation		50 00
" received 1882, other sources		227 85
" paid 1882, in premiums	$500 00	
" paid 1882, for real estate, buildings and improvements	240 00	
" paid 1882, for current expenses other than premiums	518 20	
" paid 1882, on previous indebtedness		
" remaining in the treasury	25 75	
" deficit the current year		
Totals	$1,283 95	$1,283 95

ROCK ISLAND COUNTY—Hillsdale.

OFFICERS.—President, John A. Liphardt, Hillsdale; Secretary, G. W. Guernsey, Erie; Treasurer, Jasper Sell, Hillsdale.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$67 84
" received in 1882, fees (gate and entrance)		329 50
" booth rents and permits		209 75
" received 1882, sale shares stock		
" received 1882, State appropriation		50 00
" received 1882, other sources,		6 45
" paid 1882, in premiums	$358 65	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	210 75	
" paid 1882, on previous indebtedness	20 00	
" remaining in the treasury	74 14	
" deficit the current year		
Totals	$663 54	$663 54

SALINE COUNTY—Harrisburg.

OFFICERS.—President, W. E. Burnett, Harrisburg; Secretary F. M. Pickett, Harrisburg; Treasurer, E. W. Wiedemann, Harrisburg.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$1,950 60
" booth rents and permits		962 00
" received 1882, sale shares stock		40 00
" received 1882, State appropriation		
" received 1882, other sources		1,263 50
" paid 1882, in premiums	$1,851 75	
" paid 1882, for real estate, buildings and improvements	1,745 90	
" paid 1882, for current expenses other than premiums	568 45	
" paid 1882, on previous indebtedness	25 20	
" remaining in the treasury	24 80	
" deficit the current year		
Totals	$4,216 10	$4,216 10

SALINE COUNTY—Eldorado.

OFFICERS.—President, John J. Jones, Eldorado; Secretary, S. T. Webber, Eldorado; Treasurer, W. L. Mitchell, Eldorado.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$5 20
" received in 1882, fees (gate and entrance)		1,974 60
" booth rents and permits		1,013 25
" received 1882, sale shares stock		800 00
" received 1882, State appropriation		
" received 1882, other sources		61 50
" paid 1882, in premiums	$1,858 50	
" paid 1882, for real estate, buildings and improvements	1,077 55	
" paid 1882, for current expenses other than premiums	632 94	
" paid 1882 on previous indebtedness	273 46	
" remaining in the treasury	12 10	
" deficit the current year		
Total	$3,854 55	$3,854 55

SANGAMON COUNTY.

Officers.—President, George Pickrell, Wheatfield; Secretary, James A. Winston, Springfield; Treasurer, E. A. Hall, Springfield.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$33 62
" received in 1882, fees (gate and entrance)		6,092 70
" received, 1882, booth rents and permits		1,178 50
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		938 79
" paid 1882, in premiums	$5,202 50	
" paid 1882, for real estate, buildings and improvements	376 51	
" paid 1882, for current expenses other than premiums	2,359 25	
" paid 1882, on previous indebtedness	205 00	
" remaining in the treasury	200 35	
" deficit the current year		
Totals	$8,343 61	$8,343 61

SCHUYLER COUNTY.

Officers.—President, Robert B. McMaster, Rushville; Secretary, John S. Bagby, Rushville; Treasurer, A. H. Clark, Rushville.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$1,812 51
" booth rents and permits		
" received in 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		78 35
" paid 1882, in premiums	$1,332 25	
" paid 1882, for real estate, buildings and improvements	181 35	
" paid 1882 for current expenses other than premiums	438 65	
" paid 1882, on previous indebtedness	35 61	
" remaining in the treasury		
" deficit the current year		
Totals	$1,990 86	$1,990 86

SHELBY COUNTY.

Officers.—President, John A. Tackett, Shelbyville; Secretary, Geo. A. Roberts, Shelbyville; Treasurer, W. C. Headen, Shelbyville.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$387 81
" received in 1882, fees (gate and entrance)		1,714 45
" booth rents and permits		207 35
" received 1882, sale shares stock		70 00
" received 1882, State appropriation		100 00
" received 1882, other sources		
" paid 1882, in premiums	$1,438 00	
" paid 1882, for real estate, buildings and improvements	625 00	
" paid 1882, for current expenses other than premiums	385 14	
" paid 1882, on previous indebtedness		
" remaining in the treasury	31 47	
" deficit the current year		
Totals	$2,479 61	$2,479 61

STARK COUNTY—Wyoming.

Officers.—President, Winfield Scott, Wyoming; Secretary, A. W. King, Wyoming; Treasurer, Wm. Holgate, Wyoming.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$3 41
" received in 1882, fees (gate and entrance)		3,685 10
" booth rents and permits		530 00
" received 1882, sale shares of stock		
" received 1882, State appropriation		
" received 1882, other sources		291 11
" paid 1882, in premiums	$2,590 24	
" paid 1882, for real estate, buildings and improvements	600 00	
" paid 1882, for current expenses other than premiums	429 41	
" paid 1882, on previous indebtedness	585 30	
" remaining in treasury	304 67	
" deficit the current year		
Totals	$4,509 62	$4,509 62

STARK COUNTY—Toulon.

Officers.—President, Henry Colwell, Duncan; Secretary, Chas. Myers, Toulon; Treasurer, Samuel Burge, Toulon.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$313 70
" received in 1882, fees (gate and entrance)		2,044 45
" booth rents and permits		316 10
" received 1882, sale shares of stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		2,531 50
" paid 1882, in premiums	$1,858 00	
" paid 1882, for real estate, buildings and improvements	3,907 82	
" paid 1882, for current expenses other than premiums	653 00	
" paid 1882, on previous indebtedness	421 56	
" remaining in treasury		
" deficit the current year		1,531 33
Totals	$6,840 38	$6,840 38

St. CLAIR COUNTY.

Officers.—President, Joseph Reichert, Freeburgh; Secretary, Don Turner, Belleville; Treasurer, M. T. Stookey, Belleville.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$3,069 55
" booth rents and permits		1,238 00
" received 1882, sale shares of stock		1,000 00
" received 1882, State appropriation		
" received 1882, other sources		1,589 85
" paid 1882, in premiums	$2,139 00	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	2,601 20	
" paid 1882, on previous indebtedness		
" remaining in the treasury	2,157 20	
" deficit the current year		
Totals	$6,897 40	$6,897 40

TAZEWELL COUNTY.

Officers.—President, Ira B. Hall, Delavan; Secretary, G. W. Patton, Delavan; Treasurer, R. Frey, Delavan.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$3,042 75
" booth rents and permits		221 00
" received 1882, sale shares of stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		366 90
" paid 1882, premiums	$2,012 75	
" paid 1882, for real estate, buildings and improvements	1,547 57	
" paid 1882, for current expenses other than premiums	89 40	
" paid 1882, on previous indebtedness	83 93	
" remaining in the treasury		
" deficit the current year		
Totals	$3,733 65	$3,733 65

UNION COUNTY—Jonesboro.

Officers.—President, L. J. Hess, Anna; Secretary, Joseph H. Samson, Jonesboro; Treasurer, Charles Barringer, Jonesboro.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		$22 00
" received in 1882, fees (gate and entrance)		1,886 90
" booth rents and permits		410 35
" received 1882, sale shares of stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		
" paid 1882, in premiums	$1,570 50	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	647 00	
" paid 1882, on previous indebtedness		
" remaining in the treasury	201 75	
" deficit the current year		
Totals	$2,419 25	$2,419 25

UNION COUNTY—Anna.

Officers.—President, J. Hileman, Anna; Secretary, C. E. Kirkpatrick, Anna; Treasurer, M. V. Ussey, Anna.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		$20 00
" received in 1882, fees (gate and entrance)		1,564 27
" booth rents and permits		684 00
" received 1882, sale shares of stock		516 00
" received 1882, State appropriation		
" received 1882, other sources		155 00
" paid 1882, in premiums	$1,163 65	
" paid 1882, for real estate, buildings and improvements	803 36	
" paid 1882, for current expenses other than premiums	477 80	
" paid 1882, on previous indebtedness	354 37	
" remaining in the treasury	200 17	
" deficit the current year		
Totals	$2,999 35	$2,999 35

VERMILION COUNTY—Catlin.

Officers—President, J. H. Oakwood, Catlin; Secretary, G. W. F. Church, Catlin; Treasurer, Arthur Jones, Catlin.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$1,709 75
" booth rents and permits		320 15
" received 1882, sale shares stock		
" received 1882, State appropriation		33 33
" received 1882, other sources		217 41
" paid 1882, in premiums	$520 25	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	781 39	
" paid 1882, on previous indebtedness	958 00	
" remaining in the treasury	21 00	
" deficit the current year		
Totals	$2,280 64	$2,280 64

VERMILION COUNTY—Hoopeston.

Officers—President, J. A. Cunningham, Hoopeston; Secretary, Dale Wallace, Hoopestown; Treasurer, Wm. Moore. Hoopeston.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$335 17
" received in 1882, fees (gate and entrance)		2,705 60
" booth rents and permits		900 00
" received 1882, sale shares stock		
" received 1882, State appropriation		
" received 1882, other sources		56 00
" paid 1882, in premiums	$1,764 88	
" paid 1882, for real estate, buildings and improvements	1,266 66	
" paid 1882, for current expenses other than premiums	582 80	
" paid 1882, on previous indebtedness	332 99	
" remaining in the treasury	49 44	
" deficit the current year		
Totals	$3,996 77	$3,996 77

WARREN COUNTY.

Officers—President, Robert S. Patton, Monmouth; Secretary, George C. Rankin, Monmouth; Treasurer, W. S. Hubbard, Monmouth.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$3,938 75
" booth rents and permits		326 61
" received 1882, sale shares stock		180 00
" received 1882, State appropriation		100 00
" received 1882, other sources		
" paid 1882, in premiums	$2,575 00	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	1,292 90	
" paid 1882, on previous indebtedness	500 00	
" remaining in the treasury	177 46	
" deficit the current year		
Totals	$4,545 36	$4,545 36

WHITE COUNTY.

OFFICERS.—President, Orlando Burrell, Carmi; Secretary, R. L. Organ, Carmi; Treasurer, James I. McClintock, Carmi.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$4,001 55
" booth rents and permits		1,391 95
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		244 50
" paid 1882, in premiums	$2,840 50	
" paid 1882, for real estate, buildings and improvements	1,000 00	
" paid 1882, for current expenses other than premiums	859 00	
" paid 1882, on previous indebtedness	1.038 50	
" remaining in the treasury		
" deficit the current year		
Totals	$5,738 00	$5,738 00

WHITESIDE COUNTY—Sterling.

OFFICERS.—President, R. B. Witmer, Sterling; Secretary, W. F. Eastman, Sterling; Treasurer, John Alexander, Sterling.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
received in 1882, fees (gate and entrance)		$4,464 10
booth rents and permits		373 50
received 1882, sale shares stock		
received 1882, State appropriation		33 33
received 1882, other sources		780 70
paid 1882, in premiums	$2,108 95	
paid 1882, for real estate, buildings and improvements		
paid 1882, for current expenses other than premiums	3,049 27	
paid 1882, on previous indebtedness		
remaining in the treasury	493 41	
deficit the current year		
Totals	$5,651 63	$5,651 63

WHITESIDE COUNTY—Morrison.

OFFICERS.—President, Robert E. Logan, Morrison; Secretary, Ed. J. Congar, Morrison; Treasurer, A. C. McAllister, Morrison.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		
" received in 1882, fees (gate and entrance)		$2,277 00
" booth rents and permits		847 94
" received 1882, sale shares stock		
" received 1882, State appropriation		33 33
" received 1882, other sources		
" paid 1882, in premiums	$1,479 24	
" paid 1882, for real estate, buildings and improvements	523 95	
" paid 1882, for current expenses other than premiums	1,312 41	
" paid 1882, on previous indebtedness	901 77	
" remaining in the treasury	1 90	
" deficit the current year		1,061 00
Totals	$4,219 27	$4,219 27

WHITESIDE COUNTY—Albany.

OFFICERS.—President, E. H. Nevitt, Albany; Secretary, J. F. Happer, Albany; Treasurer, E. Olds, Albany.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$3 08
" received in 1882 fees (gate and entrance)		840 70
" booth rents and permits		499 74
" received 1882, sale shares stock		
" received 1882, State appropriation		33 34
" received 1882, other sources		
" paid 1882, in premiums	$648 75	
" paid 1882, for real estate, buildings and improvements	$100 00	
" paid 1882, for current expenses other than premiums	542 89	
" paid 1882, on previous indebtedness		
" remaining in the Treasury	85 22	
" deficit the current year		
Totals	$1,376 86	$1,376 86

WILLIAMSON COUNTY.

OFFICERS.—President, Geo. W. Young, Marion; Secretary, J. M. Burkhart, Marion; Treasurer, Chas. M. Kern, Marion.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		$89 32
received in 1882, fees (gate and entrance).		1,654 40
booth rents and permits		410 00
received 1882, sale shares stock		
received 1882, State appropriation		100 00
received 1882, other sources		
paid 1882, in premiums	$1,149 40	
paid 1882, for real estate, buildings and improvements	310 57	
paid 1882, for current expenses other than premiums.	519 7.	
paid 1882, on previous indebtedness.		
remaining in the treasury	274 03	
deficit the current year		
Totals	$2,253 72	$2,253 72

WINNEBAGO COUNTY.

OFFICERS.—President, J. C. Chappell, Rockford; Secretary, H. P. Kimball, Rockford; Treasurer, Horace Brown, Rockford.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury, last report		
" received in 1882, fees (gate and entrance)		$5,864 20
" booth rents and permits		303 70
" received 1882, sale shares stock		
" received 1882, State appropriation		100 00
" received 1882, other sources		1,718 60
" paid 1882, in premiums	$2,092 90	
" paid 1882, for real estate, buildings and improvements		
" paid 1882, for current expenses other than premiums	2,127 60	
" paid 1882, on previous indebtedness	3,516 37	
" remaining in the treasury	249 63	
" deficit the current year		
Totals	$7,986 50	$7,986 50

WOODFORD COUNTY.

Officers.—President, Edwin Hodgson, El Paso; Secretary, Walter Bennett, El Paso; Treasurer, J. B. Swartz, El Paso.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		$271 04
" received in 1882, fees (gate and entrance)		2,968 20
" booth rents and permits		259 50
" received 1882, sale shares of stock		
" received 1882, State appropriation		
" received 1882, other sources		481 11
" paid 1882, in premiums	$2,346 25	
" paid 1882, for real estate, buildings and improvements	700 00	
" paid 1882, for current expenses other than premiums	1,056 10	
" paid 1882, on previous indebtedness		
" remaining in the treasury	94 68	
" deficit the current year		217 18
Totals	$4,197 03	$4,197 03

ILLINOIS STATE FAIR.

FINANCIAL EXHIBIT FOR 1882.

Amount in treasury last report		$733 19
" received in 1882, fees (gate and entrance)		24,075 00
" booth rents, permits, etc		5,322 95
" received 1882, State appropriation		3,000 00
" received 1882, other sources, from Fat Stock Show		674 56
" paid 1882, in premiums	$15,068 38	
" paid 1882, for current expenses other than premiums	12,018 43	
" remaining in the treasury	6,718 89	
Totals	$33,805 70	$33,805 70

FAT STOCK SHOW.

FINANCIAL EXHIBIT FOR 1882.

Amount deficit last report	$2,909 26	
" received in 1882, fees, (gate and entrance)		$6,271 90
" received 1882, subscriptions		3,435 00
" paid 1882, in premiums	4,354 00	
" paid 2882, for current expenses other than premiums	4,678 34	
" paid 1882, on previous indebtedness, $674 56		
" deficit		2,234 70
Totals	$11,941 60	$11,941 60

ILLINOIS STATE FAIR.

REPORT OF EXHIBITION FOR 1882.

Departments.	Number of entries in each department...... ...	Amount of premiums offered to each departm'nt	Amount of premiums paid to each department......
A—Cattle	392	$4,340 00	$3,695 00
B—Horses and Equestrianism	667	3,301 00	2,921 00
B—Mules and Asses	17	475 00	275 00
C—Sheep	431	1,320 00	1,090 00
D—Hogs	375	1,550 00	1,530 00
E—Poultry	339	812 00	481 00
F—Mechanic Arts—Light machines, agricultural implements, stoves, castings, worked metals, household furniture, manufactures of various kinds, engines, machinery, etc.; vehicles, sewing and knitting machines, etc	835	105 00	95 00
G—Farm Products—Grain, seeds, vegetables, butter, cheese, cakes, etc	606	802 00	701 00
H—Horticulture and Floriculture—Trees, fruits, flowers, plants, canned and preserved fruits, jellies, pickles, etc	358	1,276 00	1,092 00
I—Fine Arts—Musical instruments, sculpture, painting, drawing, wax, feathers, hair work, etc	196	176 00	70 00
K—Textile Fabrics—Mill fabrics, household fabrics, needle work	746	575 00	542 00
L—Natural History—Botany, mineralogy, conchology, entomology, ichthyology, herpetology.	28	335 00	335 00
M—Speed	38	1,100 00	1,710 00
N—Education	345	416 00	332 50
Miscellaneous—Silver medals, etc	....	....	198 88
Totals	5,373	$16,583 00	$15,068 38

FAT STOCK SHOW.

REPORT OF EXHIBITION FOR 1882.

Departments.	Number entries...	Amount of premiums offered ...	Amount of premiums paid ......
A—Cattle	238	$3,075 00	$2,380 00
B—Horses	11	....	....
C—Sheep	145	950 00	758 00
D—Hogs	185	990 00	890 00
E—Poultry	98	188 00	188 00
Premiums of previous year	....	......	138 00
Totals	677	$5,208 00	$4,354 00

S. D. FISHER,
Secretary.

JAS. R. SCOTT,
President State Board of Agriculture.

Number of Entries, Amount of Premiums Offered, and Amount of Premiums Paid by each Association.

LIVE STOCK EXHIBIT.

Counties	Location of Fair.	CATTLE.			HORSES AND EQUESTRIANISM.			MULES AND ASSES.			SHEEP.			HOGS.		
		No. entries......	Amount premiums offered .	Amount premiums paid ..	No. entries...	Amount premiums offered	Amount premiums paid	No. entries......	Amount premiums offered	Amount premiums paid	No. entries......	Amount premiums offered ..	Amount premiums paid	No. entries......	Amount premiums offered ...	Amount premiums paid ....
Adams.	Camp Point	55	$697 00	$355 00	140	$638 00	$632 00	11	$77 00	$49 00	61	$165 00	$162 00	56	$286 00	$243 00
Alexander																
Bond																
Boone	Belvidere ...	17	253 00	16 00	79	361 00	225 00				32	72 00	42 00	44	152 00	48 00
Brown	Mt. Sterling	51	193 00	170 00	165	505 00	435 00	15	105 00	46 00	39	132 00	68 50	60	245 00	151 00
Bureau......	Princeton ...	71	858 00	442 00	146	709 00	512 00	2	27 00	18 00	50	249 00	174 00	100	391 00	266 00
Calhoun																
Carroll	Mt. Carroll .	58	376 75	156 75	99	402 50	206 25				18	142 50	39 00	21	162 00	75 25
Cass	Virginia	18	287 00	269 00	160	628 00	565 00	4	42 00	19 00	31	65 50	61 50	16	137 00	81 00
Champaign .	Champaign.	9	280 00	73 00	197	414 00	331 00		19 00		78	87 00	87 00	145	105 00	77 00
Christian.																
Clark	Marshall . ..	24	245 00	27 90	74	336 50	63 30	7	87 00	7 60	7	45 00	4 60	22	76 00	9 80
Clay	Flora...... ...	19	444 00	175 00	53	429 00	240 20	7	84 00	13 00	21	87 00	68 00	20	138 00	70 00
Clinton......																
Coles	Charleston.	31	664 00	279 00	217	57 00	471 00	6	55 00	37 50	54	85 50	83 50	43	174 00	159 50
Cook																
Crawford. .	Robinson	18	262 00	120 00	66	727 00	554 00	10	64 00	32 00	26	101 00	74 00	23	109 00	52 00
Cumberland																
DeKalb	Sycamore ...	40	543 00	133 00	72	320 00	193 00	1	18 00	5 00	5	93 00	22 00	24	78 00	64 00
DeKalb......	Sandwich. ..	26	277 50	56 00	36	200 00	96 00					49 00		27	45 00	24 00
DeWitt	Clinton	34	538 00	125 00	254	383 00	284 75	5	39 00	25 00	33	81 00	59 50	23	96 00	55 00
Douglas	Tuscola	15	189 00	70 00	65	300 00	100 00	7	60 00	15 00	2	39 00	2 50	2	72 00	6 00
DuPage. ..	Wheaton ...	30	198 00	103 00	41	340 00	91 00				28	56 00	53 00	1	60 00	5 00
Edgar	Paris. .	54	469 00	444 00	195	789 00	773 00	19	58 00	36 00	26	45 00	45 00	57	182 00	172 00
Edwards....	Albion	46	268 00	176 50	110	485 50	416 00	15	41 50	34 50	42	90 50	52 00	47	196 00	105 50
Effingham ..	Effingham ..	21	141 00	99 00	25	165 00	97 00	2	41 00	6 00	7	50 00	34 00	16	119 00	50 00
Fayette......	Vandalia	46	239 50	50 50	135	293 50	101 00				74	145 00	32 50	21	100 00	17 25

Illinois Agricultural Fairs, 1882—Continued.

Counties.	Location of Fair.	Cattle.			Horses and Equestrianism.			Mules and Asses.			Sheep.			Hogs.		
		No. entries	Amount premiums offered	Amount premiums paid	No. entries	Amount premiums offered	Amount premiums paid	No. entries	Amount premiums offered	Amount premiums paid	No. entries	Amount premiums offered	Amount premiums paid	No. entries	Amount premiums offered	Amount premiums paid
Ford	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Franklin	Benton	34	$76 50	$48 50	247	$909 50	$551 00	27	$107 00	$87 00	9	$38 00	$23 00	21	$45 50	$36 50
Fulton	Avon	88	745 00	298 00	186	435 00	389 00	2	10 00	6 00	50	93 00	74 00	73	217 00	127 00
Gallatin	Shawneeto'n	43	348 00	318 00	111	661 00	512 50	14	84 00	51 00	22	58 00	45 00	12	216 00	60 50
Greene	Carrollton	34	360 00	138 00	291	604 00	540 00	35	74 00	64 00	55	104 00	73 00	49	155 00	90 00
Grundy	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Hamilton	McLeansboro	26	178 00	74 00	129	405 75	232 75	15	37 25	34 75	29	54 00	45 00	16	58 50	23 50
Hancock	Carthage	22	337 00	153 00	109	538 00	324 00	14	41 00	31 00	39	79 00	58 50	53	88 00	46 00
Hancock	Warsaw	41	274 00	108 00	156	605 00	427 00	2	31 00	10 00	7	45 00	15 00	5	32 00	12 00
Hardin	Elizabethto'n	15	83 00	44 50	25	214 00	114 50	7	49 50	19 50	4	15 00	4 00	....	23 50	....
Henderson	Biggsville	35	366 00	140 00	133	527 00	413 00	....	29 00	....	..	47 50	....	16	194 00	46 00
Henry	Cambridge	44	510 00	309 00	51	425 00	295 00	....	....	....	12	105 00	54 00	22	192 00	69 00
Iroquois	Watseka	62	331 00	190 00	82	406 00	209 00	4	37 00	16 00	49	72 00	72 00	70	136 00	80 00
Jackson	Murphysboro	5	150 00	5 50	49	245 50	161 00	6	114 00	18 00	14	42 50	35 50	26	76 50	39 00
Jackson	Carbondale	42	312 00	220 00	83	572 00	428 50	19	110 00	93 00	41	160 00	86 50	30	192 00	81 50
Jasper	Newton	43	552 00	121 00	46	395 00	188 00	10	47 00	25 00	14	108 00	34 00	11	181 00	40 00
Jefferson	Mt. Vernon	42	246 00	194 00	117	419 00	264 00	21	112 00	64 00	36	119 00	88 00	52	122 00	102 00
Jersey	Jerseyville	48	450 00	375 00	472	1,108 00	1,083 00	19	90 00	85 00	60	150 00	96 00	22	166 00	75 00
JoDaviess	Galena	22	197 00	139 00	57	233 00	131 00	4	8 00	5 00	21	58 00	29 00	10	128 00	20 00
JoDaviess	Warren	32	153 00	104 50	49	133 50	91 00	....	....	....	16	21 00	24 00	7	35 50	25 00
Johnson	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Kane	Aurora	99	600 00	230 00	105	575 00	284 00	3	25 00	5 00	45	108 00	90 00	64	222 00	142 00
Kankakee	Kankakee	51	356 50	123 00	147	314 00	275 50	1	15 00	4 00	22	136 00	78 00	35	214 00	102 00
Kendall	Yorkville	32	217 50	39 50	83	207 00	124 00	....	24 50	....	15	70 50	22 00	31	108 00	43 50
Knox	Knoxville	43	700 00	250 00	125	300 00	300 00	50	100 00	50 00	70	100 00	50 00	80	200 00	75 00
Lake	Libertyville	55	229 00	84 50	122	119 50	95 50	....	7 50	....	52	61 00	63 00	27	121 50	42 50
Lake	Waukegan	65	895 50	171 50	107	403 00	280 50	....	....	....	65	351 00	167 50	25	270 00	85 00
LaSalle	Mendota	68	960 00	316 00	194	1,169 00	770 00	3	106 00	18 00	40	297 00	18 00	52	326 00	159 00
Lawrence	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Lee	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Livingston	Fairbury	55	1,200 00	381 00	183	1,081 00	647 00	10	47 00	26 00	22	162 00	82 00	65	209 00	129 00
Logan	Lincoln	50	636 00	347 00	280	644 00	495 00	10	68 00	49 50	49	124 50	80 00	81	227 00	188 00
Logan	Atlanta	48	499 00	136 00	247	493 00	414 50	7	41 50	27 50	25	72 00	63 25	23	126 00	59 00
Macon	Decatur	54	738 00	328 05	164	712 00	353 03	12	104 00	53 33	32	144 00	62 78	60	460 00	261 23

Macoupin.	Carlinville...	17	237 00	129 00	278	659 00	587 00	4	60 00	20 00	36	168 00	117 00	41	204 00	136 00
Madison																
Marion.......	Salem	11	225 00	53 00	100	329 00	419 50	9	345 00		21	61 00	47 00	7	59 00	27 00
Marion.	Centralia. ...		187 00	168 00		334 00	253 00		60 00	20 00		56 00	54 00		112 00	50 00
Marshall ..	Wenona	156	1,215 00	1,000 00	314	1,076 00	779 00	7	108 00	43 00	59	297 00	263 00	171	344 00	313 00
Mason... ..	Havana	2	276 00		45	361 00	185 00	5	98 00	17 10	2	99 00	7 00	8	156 00	37 00
Massac	Metropolis .	15	61 50	43 00	41	128 00	107 00	10	37 50	22 00						
McDonough .	Macomb. ...	39	359 00	129 00	127	288 00	166 00	4	57 00	20 00	21	64 00	54 00	90	230 00	127 00
McHenry	Wood-tock .	135	562 00	185 00	159	302 00	199 00	4	44 00	8 00	62	205 00	118 00	41	155 00	81 00
McHenry	Marengo	67	318 00	124 00	103	249 00	125 00				25	86 00	40 50	34	168 00	57 00
McLean......																
Menard......																
Mercer.......	Aledo..........	25	442 00	250 00	256	646 00	545 00	6	47 00	23 00	30	117 00	79 00	42	327 00	205 00
Monroe																
Montgomery	Hillsboro. ..	8	252 75	75 20	102	286 00	163 60	7	56 60	19 20	14	70 00	41 60	14	82 00	26 40
Morgan	Jacksonville	36	741 25	380 00	250	797 50	676 00	12	128 50	51 00	80	261 00	256 00	96	436 00	391 00
Moultrie	Sullivan ...	25	350 00	125 00	40	375 00	150 00		40 00		10	100 00	25 00	30	150 00	50 00
Ogle....... ..	Oregon	21	514 00	134 00	109	314 00	185 50	2	18 50	4 50	51	81 00	50 00	14	69 00	14 00
Peoria........	State Fair...															
Perry....... .	Pinckneyville.	29	163 00	84 00	72	510 00	283 00	7	69 00	32 00	13	30 50	26 00	12	75 00	22 00
Piatt....... .	Monticello.	47	335 50	321 00	76	345 00	267 50	7	27 50	12 50	23	63 00	24 00	20	100 00	58 00
Pike..........	Pittsfield	27	392 00	186 00	149	480 00	415 00	9	80 00	60 00	26	125 00	111 00	30	199 00	128 00
Pope.........	Golconda....	19	62 50	48 50	64	198 00	176 00	19	104 00	88 00	20	55 00	51 00	11	49 00	38 00
Pulaski																
Putnam......																
Randolph .	Sparta........	20	320 00	63 00	86	341 00	307 00	2	57 00	6 00	22	88 50	22 50	16	76 00	38 00
Randolph...	Chester	16	309 00	145 00	57	398 00	250 00	9	96 00	48 00	18	95 00	49 00	16	152 00	71 00
Richland....	Olney.	49	629 00	197 50	71	316 00	235 00	6	64 00	6 00	13	138 00	29 00	29	372 00	76 00
Rock Island	Port Byron .	44	167 00	75 00	37	120 00	61 00		10 00		13	15 00	13 50	19	101 00	31 50
Rock Island.	Hillsdale. ...	7	110 00	18 50	45	158 00	127 00		13 25		11	15 75	19 50	17	151 75	28 50
Saline.......	Harrisburg.	53	255 00	173 00	94	337 50	303 50	29	119 00	85 00	22	94 50	37 50	24	153 00	54 00
Saline.......	Eldorado	55	225 00	182 00	127	572 50	299 00	25	134 50	97 50	14	89 00	33 50	32	158 50	92 50
Sangamon	Springfield	183	1,455 00	790 00	275	1,069 00	860 00	24	150 00	150 00	62	265 00	147 00	36	330 00	260 00
Schuyler ...	Rushville	34	379 00	163 50	120	551 00	348 00	6	42 00	20 50	39	118 00	80 50	26	237 00	89 50
Scott......																
Shelby.......	Shelbyville	51	346 00	279 00	91	385 00	312 00	6	76 00	33 00	54	100 00	100 00	[illegible]	89 00	82 00
Stark	Wyoming	48	561 00	482 00	143	582 00	581 00	5	60 00	28 00	73	204 00	170 00	70	195 00	218 00
Stark.........	Toulon.	56	815 00	273 00	114	541 00	372 00	10	70 00	25 00	76	177 00	159 00	79	246 00	213 00
St Clair	Belleville....	41	326 00	187 00	128	256 00	222 00	28	72 00	50 00	37	64 00	45 00	53	166 00	88 00
Stephenson .																
Tazewell	Delavan	82	607 00	262 00	316	5 00	478 00	14	64 00	42 00	82	105 00	95 00	143	345 00	278 00
Union........	Jonesboro...	98	309 50	222 50	106	289 00	271 00	38	166 50	126 50	43	83 00	79 00	34	102 00	95 00
Union......	Anna.	69	356 00	173 00	97	178 00	147 00	17	94 00	56 00	7	34 50	19 50	13	70 00	52 50
Vermilion .	Catlin.... ...	18	243 00	56 50	207	447 00	218 50	10	37 00	12 50	23	84 00	32 00	32	116 00	47 00
Vermilion .	Hoopeston..	73	883 00	498 63	148	387 00	381 00	6	47 00	24 00	25	68 00	40 00	68	182 00	175 00
Wabash......																
Warren	Monmouth .	21	327 00	157 50	198	918 50	717 50				38	84 00	75 00	58	225 00	225 00
Washington																
Wayne......																
White	Carmi.... ..	46	304 00	225 00	166	650 00	430 00	17	55 00	52 00	31	188 00	56 00	36	218 00	79 00
Whiteside .	Sterling. ...	85	563 00	267 00	68	411 00	210 00		16 00		19	117 00	31 00	36	108 00	84 50
Whiteside .	Morrison.....	81	379 00	207 00	78	196 00	135 00		19 00		43	77 00	53 00	67	155 00	130 00

Illinois Agricultural Fairs, 1882.—Continued.

Counties.	Location of Fair.	CATTLE.			HORSES AND EQUESTRIANISM.			MULES AND ASSES.			SHEEP.			HOGS.		
		No. entries......	*Amount premiums offered*	Amount premiums paid.....	No. entries......	Amount premiums offered	Amount premiums paid.....	No. entries	Amount premiums offered.	Amount premiums paid.....	No. entries......	Amount premiums offered..	Amount premiums paid.. ..	No. entries	Amount premiums offered..	Amount premiums paid......
Whiteside ...	Albany........	36	$190 00	$81 00	49	$140 00	$123 00	2	$12 00	$3 00	4	$15 00	$10 00	5	$60 00	$13 00
Will...........	....	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Williamson..	Marion	47	124 00	94 60	99	494 50	205 80	24	106 00	95 75	19	66 00	16 00	10	112 00	28 00
Winnebago..	Rockford	53	459 00	246 00	111	331 00	263 00	2	11 00	3 00	44	96 00	69 00	27	159 00	70 00
Woodford . .	El Paso.	97	855 00	451 00	197	639 00	378 50	2	45 00	9 00	20	140 00	57 00	44	312 00	110 00
State Fair ...	Peoria	392	4,340 00	3,695 00	667	3,301 00	2,921 00	17	475 00	275 00	431	1,320 00	1,090 00	375	1,550 00	1,530 00
FatSt'k Show	Chicago	238	3,075 00	2,380 00	11	.. ..	.. ..	......	....	. ...	145	950 00	758 00	185	990 00	890 00
Total.....	....	4,733	$45,762 75	$24,267 13	12,664	$45,941 25	$31,050 68	817	$5,828 00	$2,880 23	3,470	$11,707 75	$7,538 23	4,047	$17,666 25	$10,889 93

Exhibit Illinois Agricultural Fairs—Continued.

Counties.	Location of Fair.	POULTRY.			MECHANIC ARTS.			FARM PRODUCTS.			HORTICULTURE AND FLORICULTURE.			FINE ARTS.		
		No. entries..	Amount premiums offered	Amount premiums paid	No. entries..	Amount premiums offered	Amount premiums paid	No. entries	Amount premiums offered.......	Amount premiums paid	No. entries.	Amount premiums offered.......	Amount premiums paid	No. entries.	Amount premiums offered.......	Amount premiums paid
Adams.......	Camp Point	40	$80 50	$43 50	166	$146 00	$135 00	464	$239 00	$192 00	548	$220 75	$207 00	102	$125 50	$66 00
Alexander..																
Bond....																
Boone........	Belvidere.....	18	101 00	12 00	94	160 00	77 50	55	57 50	28 50	66	84 00	54 50	60	59 00	40 00
Brown.	Mt. Sterling..	35	50 00	30 00	77	144 00	85 50	168	88 00	55 75	327	108 00	91 50	51	29 00	36 00
Bureau.......	Princeton	83	147 75	78 00	113	147 00	74 00	99	158 00	125 00	343	275 50	201 50	34	70 50	29 00
Calhoun																
Carroll.......	Mt. Carroll ..	18	45 00	13 25	29	59 25	38 00	145	76 25	57 75	101	75 00	79 50	37	41 25	28 25
Cass..........	Virginia	15	25 50	11 00	57	89 50	53 00	147	111 50	95 00	455	141 50	141 00	78	64 50	39 00
Champaign..	Champaign...	40	50 00	28 50	105	137 00	112 00	85	52 00	36 50	174	110 00	85 00	91	44 50	26 50
Christian																
Clark.........	Marshall......	17	19 00	1 40	1			18	18 00	2 20	25	63 00	3 80	3	23 00	1 60
Clay...........	Flora	4	66 00	3 50	10	149 50	40 50	108	149 50	104 50	209	171 50	97 50	32	142 10	63 00
Clinton																
Coles........	Charleston ..	102	209 00	124 00	26	200 50	54 00	163	93 00	71 00	269	139 50	123 50	43	47 00	43 00
Cook																
Crawford	Robinson.....	8	15 00	5 50	2	81 50	14 00	102	55 00	37 50	297	182 00	116 00	307	161 00	134 50
Cumberland.																
DeKalb.......	Sycamore....	16	28 00	10 00	53	47 00	23 00	69	80 00	40 00						
DeKalb	Sandwich.....		82 00		6	250 00	120 00				10	50 00	30 00	33	70 00	30 00
DeWitt	Clinton	62	37 00	23 00	34	96 00	37 00	102	50 00	37 00	98	75 00	45 50	33	24 00	9 00
Douglas......	Tuscola.......		30 00		16	100 00		53	150 00	70 00	105	100 00	27 50	13	20 00	3 75
DuPage......	Wheaton. ...	31	24 00	22 00	10	33 00	23 50	45	80 50	39 50	8	17 00	8 00	72	72 00	58 00
Edgar........	Paris..........	52	130 00	69 00	93	95 00	61 00	824	309 50	302 50	189	265 00	225 00			
Edwards.....	Albion	27	48 00	15 00	48	145 50	99 00	167	132 25	105 75	9	25 50	15 00	13	28 50	14 50
Effingham....	Effingham....	13	19 50	10 50	12			130	141 00	108 00	153	105 00	56 00	14	25 50	3 75
Fayette	Vandalia ...	25	17 00	7 25	16	101 00	5 00	177	87 50	32 25	295	238 75	64 25			
Ford																
Franklin.....	Benton.	39	39 00	24 00	15	30 00	17 00	117	56 50	50 50	120	42 50	42 50			
Fulton.	Avon....... ..	66	58 00	40 00	57	106 00	77 00	329	117 00	104 00	581	121 00	100 00	26	30 00	16 00
Gallatin......	Shawneet'wn.	17	65 00	7 55	7	99 00	11 00	50	41 00	24 35	119	96 00	91 25	10	32 50	6 30
Greene.......	Carrollton...	230	81 50	75 50	152	193 00	145 00	337	145 00	124 00	630	127 00	116 00	268	104 00	84 00
Grundy																
Hamilton.....	McLeansboro	31	44 00	11 50	19	121 00	27 00	80	99 50	55 00	106	94 00	44 00	17	36 00	11 50
Hancock.....	Carthage....	45	72 00	41 50	101	53 00	50 00	194	216 00	114 50	195	150 50	96 50	75	106 00	59 50
Hancock.....	Warsaw.......	3	25 00	1 00	144	53 00	36 00	160	46 00	12 50	266	150 00	73 75	52		
Hardin.......	Elizabetht'wn	3	27 50	4 00	3	40 00	5 00	41	53.25	41 90	100	30 25	28 50	7		

Exhibit Illinois Agricultural Fairs—Continued.

Counties.	Location of Fair.	POULTRY.			MECHANIC ARTS.			FARM PRODUCTS.			HORTICULTURE AND FLORICULTURE.			FINE ARTS.		
		No entries ..	Amount premiums offered.......	Amount premiums paid	No. entries .	Amount premiums offered	Amount premiums paid	No. entries	Amount premiums offered.	Amount premiums paid	No. entries.	Amount premiums offered	Amount premiums paid	No. entries .	Amount premiums offered	Amount premiums paid
Henderson ..	Biggsville ...	18	$37 75	$12 50	21	$25 00	$10 00	182	$67 25	$61 25	499	$95 00	$126 25	57	$16 00	$10 00
Henry.......	Cambridge.. .	13	78 00	13 25	25	68 00	57 00	300	121 00	113 50	95	84 00	80 00	352	212 50	197 50
Iroquois ...	Watseka......	40	56 00	21 00	27	38 50	10 00	76	48 00	31 50	85	103 00	33 50	43	10 50	3 50
Jackson......	Murphysboro	13	22 50	7 50	23	138 00	16 50	129	75 00	55 50	218	64 50	46 50	6	39 00	1 25
Jackson ...	Carbondale.	46	96 50	46 00	9	82 00	24 50	......	......	......	250	79 50	73 00	270	187 25	136 50
Jasper	Newton	13	26 00	8 00	.....	......	......	75	41 00	24 00	116	64 00	35 00	40	150 00	54 75
Jefferson ...	Mt. Vernon .	31	56 50	25 50	14	87 00	42 00	170	215 00	130 00	27	64 00	34 50	20	42 00	19 00
Jersey	Jerseyville .	103	167 50	116 00	128	326 00	261 00	343	214 00	204 00	594	284 00	269 00	478	226 00	207 00
Jo Daviess...	Galena	18	60 00	15 00	48	60 00	40 00	12	40 00	38 00	52	105 00	60 00	125	61 00	78 00
Jo Daviess...	Warren.	37	88 50	25 00	17	23 50	5 40	42	30 50	19 80	79	30 50	25 65	23	26 50	16 20
Johnson	....	......	......	......	.....	......	......	......	......	......	......	......	......	.....	......	......
Kane........	Aurora	61	72 00	59 00	4	87 00	34 00	239	225 00	212 00	96	200 00	170 00	50	76 00	58 00
Kankakee. ..	Kankakee....	97	80 50	40 75	37	80 00	72 00	152	138 00	119 50	68	67 50	61 50	50	50 00	27 00
Kendall.....	Yorkville	23	29 25	14 00	21	24 00	14 00	106	62 50	36 00	41	24 75	15 50	24	58 50	16 00
Knox.........	Knoxville. ..	200	80 00	25 00	200	150 00	50 00	400	110 00	50 00	400	200 00	50 00	200	100 00	25 00
Lake	Libertyville..	33	30 50	18 50	33	9 50	......	117	46 00	34 50	77	57 25	48 25	19	15 00	9 50
Lake.	Waukegan	299	303 00	95 75	13	47 50	30 00	237	166 00	31 00	167	72 00	63 50	.....	......	......
LaSalle	Mendota . ..	27	87 00	18 00	161	296 00	144 00	90	199 00	80 00	74	280 00	72 00	146	145 00	117 00
Lawrence ..	....	......	......	......	.....	......	......	......	......	......	......	......	......	.....	......	......
Lee..........	....	......	......	......	.....	......	......	......	......	......	......	......	......	.....	......	......
Livingston ..	Fairbury	71	85 00	30 75	23	66 00	61 00	340	156 00	139 25	432	170 00	141 50	60	52 00	42 25
Logan.	Lincoln.......	87	136 50	81 00	88	143 50	112 00	253	173 50	130 00	355	186 00	142 75	99	133 00	54 75
Logan.	Atlanta	6	33 25	6 00	95	57 50	45 00	201	82 25	54 25	520	104 25	91 75	39	42 90	22 75
Macon........	Decatur	46	49 00	30 38	22	100 00	67 50	60	71 00	41 85	35	100 00	56 03	.....	......	......
Macoupin	Carlinville....	57	90 00	54 00	46	180 00	67 00	98	88 00	78 50	347	146 00	122 00	44	42 00	40 09
Madison....	....	......	......	......	.....	......	......	......	......	......	......	......	......	.....	......	......
Marion	Salem....	13	60 00	7 50	4	......	......	203	119 50	88 15	8	36 50	11 40	.....	......	......
Marion	Centralia.....	......	40 00	35 00	.....	98 00	......	......	116 00	104 00	......	128 00	112 00	.....	50 00	29 00
Marshall....	Wenona	26	90 00	20 00	151	296 00	205 50	443	187 50	158 00	616	268 50	238 00	122	69 50	60 00
Mason.	Havana	18	41 00	12 60	52	28 00	10 00	187	122 00	78 50	291	92 00	81 00	12	25 00	6 00
Massac......	Metropolis ..	1	22 00	2 00	1	82 00	3 00	55	107 50	83 00	16	22 00	7 00	.....	......	......
McDonough	Macomb	68	90 50	45 60	29	193 50	58 00	121	128 00	51 00	155	90 50	44 50	16	35 50	13 50
McHenry ...	Woodstock...	48	100 00	16 00	300	25 00	25 00	276	141 75	91 50	208	125 00	105 00	103	88 00	46 00
McHenry ...	Marengo	25	22 25	6 50	44	40 00	20 00	222	87 00	56 50	261	102 00	75 50	127	78 00	43 00
McLean......	....	......	......	......	.....	......	......	......	......	......	......	......	......	.....	......	......
Menard	....	......	......	......	.....	......	......	......	......	......	......	......	......	.....	......	......
Mercer	Aledo....	53	93 00	40 00	95	106 00	65 00	218	143 00	123 00	327	218 00	197 50	103	168 75	104 50

Montgomery	Hillsboro	6	42 00	3 20	27	207 00	76 80	80	83 00	34 40	147	86 00	43 40	40	35 00	19 20
Morgan	Jacksonville	170	241 00	168 00	36	303 50	277 00	378	160 00	129 00	794	275 00	265 50	126	125 25	91 50
Moultrie	Sullivan	20	30 00		12	40 00		20	50 00	20 00	30	60 00	30 00	15	20 00	10 00
Ogle	Oregon	7	60 00	6 50	32	39 50	13 00	89	85 25	45 75	82	72 75	53 50	15	30 75	13 50
Peoria	State Fair															
Perry	Pinckneyville	26	39 00	18 00	26	29 00	16 00	280	136 00	99 00				24	29 00	12 00
Piatt	Monticello	5	113 00	3 00	4	20 00	2 00	59	61 00	34 00	44	66 00	32 50	10	11 50	5 00
Pike	Pittsfield	24	43 00	27 00	10	15 00	15 00	51	52 00	42 00	23	47 00	38 00	17	36 00	30 00
Pope	Golconda	5	15 00	6 00	30	53 00	28 00	72	81 75	57 00	70	70 75	58 00	2	8 25	1 50
Pulaski																
Putnam																
Randolph	Sparta	6	26 50	4 50	21	86 00	35 50	167	66 75	41 75	278	77 25	37 75			
Randolph	Chester	24	47 00	47 00	124	111 00	66 00	214	95 00	92 00	265	83 00	76 00	96	52 00	51 00
Richland	Olney	43	92 00	36 50	21	178 50	47 00	206	140 50	74 25	298	150 50	77 75	11	17 00	5 00
Rock Island	Port Byron	26	31 00	16 00	30	70 00	10 00	130	70 00	61 00	85	55 00	42 00	13	31 00	12 00
Rock Island	Hillsdale	22	37 50	19 50	39			146	51 00	49 50	142	31 75	34 75	39	23 25	14 90
Saline	Harrisburg	18	24 75	13 50	11	62 50	35 00	87	59 50	39 50	145	86 50	72 50	13	22 50	12 00
Saline	Eldorado	22	52 50	12 00	32	150 50	62 00	87	135 50	97 50	114	103 50	88 50	16	28 50	14 50
Sangamon	Springfield	123	230 00	130 00	127	110 00	110 00	179	246 00	164 00	654	465 00	381 00	117	153 00	111 00
Schuyler	Rushville	14	61 50	8 00	68	167 25	94 50	202	136 50	99 75	434	96 00	89 00	33	30 00	17 00
Scott																
Shelby	Shelbyville	37	90 00	57 00	16	72 00	30 00	132	63 00	56 00	260	84 00	83 00	73	70 00	58 00
Stark	Wyoming	28	109 50	23 00	79	200 00	68 00	207	188 00	154 50	509	184 00	128 00	141	93 00	92 00
Stark	Toulon	68	125 00	34 00	109	22 00	20 00	473	143 00	132 00	700	162 00	149 00	131	92 00	60 00
St. Clair	Belleville	123	96 00	54 00	225	69 00	41 00	410	192 00	128 00	354	127 00	123 00	132	40 00	31 00
Stephenson																
Tazewell	Delavan	98	134 25	108 25	150	97 00	41 00	211	135 25	100 25	354	155 00	98 75	61	69 25	30 00
Union	Jonesboro	56	40 50	31 50	62	314 75	157 00	196	128 25	126 50	300	141 50	126 25	120	110 50	84 75
Union	Anna	29	28 50	14 50	31	217 50	47 00	86	96 25	81 60	174	100 90	94 95	272	134 50	100 75
Vermilion	Catlin	22	16 50	6 00	20	88 00	17 00	141	68 50	32 00	373	72 50	36 25	34	23 00	10 50
Vermilion	Hoopeston	36	92 00	46 00	73	77 00	77 00	80	76 00	76 00	200	88 00	69 25	13	20 00	8 00
Wabash																
Warren	Monmouth	66	64 50	42 00	36	19 00	10 00	90	84 25	78 00	639	153 00	115 25	85	91 50	64 50
Washington																
Wayne																
White	Carmi	32	57 00	34 00	52	140 00	84 00	136	146 00	79 00	190	96 50	71 50	34	67 00	38 00
Whiteside	Sterling	62	151 50	38 50				183	134 00	89 50	378	287 00	254 45	190	125 50	90 75
Whiteside	Morrison	66	54 50	41 00	36	109 00	82 00	324	121 25	114 50	295	173 00	165 00	81	55 75	50 00
Whiteside	Albany		19 00		15	2 00	2 00	45	33 00	21 00	154	79 50	32 75	96	38 00	38 00
Will																
Williamson	Marion	9	8 00	6 00	9	59 00	16 00	51	49 00	47 50						
Winnebago	Rockford	62	73 00	47 00				193	201 00	130 75	161	308 00	304 00	90	145 00	98 00
Woodford	El Paso	50	59 75	22 50	169	74 00	46 00	258	146 75	96 75	237	196 75	139 75	62	49 00	36 25
State Fair	Peoria	339	812 00	481 00	835	105 00	95 00	606	802 00	701 00	358	1,276 00	1,092 00	196	176 00	70 00
Fat St'k Sh'w	Chicago	98	188 00	188 00												
Total		4,473	$7,365 50	$3,453 48	5,774	$9,102 25	$4,610 20	16,086	$10,931 25	$8,010 95	21,557	$12,412 65	$9,457 93	6,502	$5,617 85	$3,621 70

Exhibit Illinois Agricultural Fairs, 1882—Continued.

Counties.	Location of Fair.	TEXTILE FABRICS.			NATURAL HISTORY.			SPEED RINGS.			EDUCATION.		
		Number of entries....	Amount of premiums offered.....	Amount of premiums paid........	Number of entries ...	Amount of premiums offered,.....	Amount of premiums offered.....	Number of entries.....	Amount of premiums offered.....	Amount of premiums paid........	Number of entries.....	Amount of premiums offered.....	Amount of premiums paid... ....
Adams	Camp Point	743	$291 00	$258 00				26	$430 00	$430 00			
Alexander													
Bond													
Boone	Belvidere	125	112 00	80 50				27	580 00	480 00			
Brown	Mt. Sterling	259	224 50	204 00				64	1,010 00	995 00			
Bureau	Princeton	255	229 75	178 50				25	705 00	705 00	89	$90 00	$64 00
Calhoun													
Carroll	Mt. Carroll	276	103 50	155 50	7	$13 50	$15 00	37	627 50	584 16			
Cass	Virginia	235	138 00	117 50					750 00	75 00			
Champaign	Champaign	197	62 00	51 00	4	6 00	6 00	21	640 00	540 00			
Christian													
Clark	Marshall	7	28 00	1 60									
Clay	Flora	136	192 25	87 50				28	805 00	615 00			
Clinton													
Coles	Charleston	248	135 00	116 00				23	435 00	435 00			
Cook													
Crawford	Robinson												
Cumberland													
DeKalb	Sycamore	103	125 00	62 00									
DeKalb	Sandwich							20	255 00	255 00			
DeWitt	Clinton	136	95 00	68 00				23	587 50	340 00			
Douglas	Tuscola	38	35 00	13 60				36	950 00	484 80			
DuPage	Wheaton	109	63 50	56 50				7	135 00	135 00			
Edgar	Paris	491	271 50	244 50				5	175 00	175 00			
Edwards	Albion	211	158 25	122 25				32	342 50	335 00			
Effingham	Effingham	110	122 00	14 00						435 00			
Fayette	Vandalia	28	50 00	6 00				3	155 00	30 00			
Ford													
Franklin	Benton	69	20 00	17 00				32	392 50	392 50			
Fulton	Avon	202	156 00	94 00				20	875 00	780 00	17	26 00	10 00
Gallatin	Shawneetown	51	79 00	32 85	9	11 00	4 50	64	1,355 00	1,280 00			
Greene	Carrollton	1,271	273 50	265 00				51	699 00	679 00			
Grundy													
Hamilton	McLeansboro	73	56 00	27 00				48	860 00	565 00			
Hancock	Carthage	584	262 50	213 55				20	647 70	647 70			
Hancock	Warsaw	96	43 00	11 50	9			13	170 00	170 00			

Hardin	Elizabethtown	54	45 00	32 75	1	5 00	5 00		679 00	415 00		8 00	
Henderson	Biggsville	175	50 00	75 25				16	478 00	360 00			
Henry	Cambridge	380	162 50	156 00				135	1,800 00	1,762 00			
Iroquois	Watseka	67	69 00	42 50				76	875 00	474 00			
Jackson	Murphysboro	111	89 25	29 75				30	635 00	460 00			
Jackson	Carbondale							54	844 00	834 00	27	24 00	19 00
Jasper	Newton	98	99 00	54 00				23	485 00	225 00			
Jefferson	Mt. Vernon	171	122 35	83 00				50	1,050 00	998 50			
Jersey	Jerseyville	298	155 00	132 00				29	995 00	910 00			
JoDaviess	Galena							7	875 00	650 00			
JoDaviess	Warren	153	75 95	58 55				19	560 00	525 00			
Johnson													
Kane	Aurora	147	200 00	158 00	5	16 00	10 00	41	980 00	745 00			
Kankakee	Kankakee	163	142 75	84 00	2	90 00	70 00	20	500 00	474 00			
Kendall	Yorkville	120	50 25	36 50	9	34 00	11 50	15	330 00	330 00			
Knox	Knoxville	200	100 00	25 00	12			50	450 00	300 00	200	100 00	100 00
Lake	Libertyville	266	72 50	61 50				9	175 00	175 00			
Lake	Waukegan	416	287 00	185 50				33	1,000 00	750 00			
LaSalle	Mendota	343	264 00	184 00	34	60 00	31 00	39	1,055 00	925 00			
Lawrence													
Lee													
Livingston	Fairbury	246	123 00	99 75	12	35 00	26 00	16	605 00	515 00			
Logan	Lincoln	253	204 00	127 25	3	9 00	3 00		1,660 00	1,660 00			
Logan	Atlanta	156	73 00	56 50	3	8 00	4 00	32	150 00	100 00			
Macon	Decatur	210	203 75	106 49				12	800 00	591 66	251	87 00	58 73
Macoupin	Carlinville	251	167 00	123 00	7	40 00	40 00	35	785 00	675 00			
Madison													
Marion	Salem	162	155 10	93 85									
Marion	Centralia		121 00	70 00		6 00	6 00		845 00	628 65			
Marshall	Wenona	675	300 50	272 00	25	42 00	27 00	35	952 00	941 00			
Mason	Havana	107	60 00	56 00	17	425 00	195 00						
Massac	Metropolis	57	80 00	46 25				12	315 00	152 00			
McDonough	Macomb	119	156 00	83 25				41	2,225 00	1,302 50			
McHenry	Woodstock	282	175 00	104 00	50	100 00	25 00	44	1,335 00	1,235 00	15	30 00	15 00
McHenry	Marengo	60	34 00	12 75				45	579 00	485 00			
McLean													
Menard													
Mercer	Aledo	331	158 50	109 50				17	285 00	285 00			
Monroe													
Montgomery	Hillsboro	134	116 00	48 00				9	200 00	185 00			
Morgan	Jacksonville	801	390 00	362 00	14	90 00	29 50	33	2,400 00	2,350 00			
Moultrie	Sullivan	30	7[illegible]	25 00				8	150 00	65 00			
Ogle	Oregon	104	114 00	42 0[illegible]	2	21 00	4 00	54	1,665 00	1.137 50		21 00	
Peoria	State Fair												
Perry	Pinckneyville	111	77 00	52 00				39	900 00	810 50			
Piatt	Monticello	74	59 50	43 00	2	10 00	4 00	33	860 00	242 50		100 00	100 00
Pike	Pittsfield	392	300 00	282 50				21	920 00	825 00			
Pope	Golconda	82	64 25	53 25				16	83 00	60 00			
Pulaski													
Putnam													
Randolph	Sparta	129	125 00	57 50				42	648 00	503 50			
Randolph	Chester	223	155 00	152 00				28	1,064 00	923 00			

Exhibit Illinois Agricultural Fairs, 1882—Continued.

Counties.	Location of Fair.	TEXTILE FABRICS.			NATURAL HISTORY.			SPEED RINGS.			EDUCATION.		
		Number of entries.....	Amount of premiums offered. ..	Amount of premiums paid. ...	Number of entries. .	Amount of premiums offered....	Amount of premiums paid........	Number of entries. ..	Amount of premiums offered....	Amount of premiums paid.	Number of entries....	Amount of premiums offered.....	Amount of premiums paid ....
Richland	Olney	196	$161 50	$55 25	2	$6 00	$6 00	31	$1,000 00	$940 00			
Rock Island	Port Byron	28	10 00	10 00				21	155 00	155 00			
Rock Island	Hillsdale	85	24 00	26 50				5	93 00	20 00			
Saline	Harrisburg	101	53 75	33 75				44	900 00	870 00			
Saline	Eldorado	79	126 50	56 50				61	863 00	759 00			
Sangamon	Springfield	450	388 00	318 00				51	2,100 00	1,742 50			
Schuyler	Rushville	278	156 00	132 00				2	450 00	200 00			
Scott													
Shelby	Shelbyville	153	114 00	91 00				13	295 00	90 00			
Stark	Wyoming	467	314 00	193 00				40	880 00	382 74			
Stark	Toulon	476	195 00	181 00				10	190 00	180 00	298	$75 00	$70 00
St. Clair	Belleville	326	306 00	197 00				73	1,018 00	973 00			
Stephenson													
Tazewell	Delavan	402	184 25	126 75	4	13 00	10 00	39	355 00	338 00			
Union	Jonesboro	322	182 00	144 25									
Union	Anna	163	81 25	78 50				50	417 50	225 00			
Vermilion	Catlin	152	69 00	27 00				5	360 00	25 00			
Vermilion	Hoopeston	44	24 00	20 00				50	725 00	350 00			
Wabash													
Warren	Monmouth	471	159 75	124 25				32	1,105 00	938 00			
Washington													
Wayne													
White	Carmi	196	169 00	142 00				76	1,550 00	1,550 00			
Whiteside	Sterling	247	116 50	89 75	14	41 00	18 50		700 00	700 00			
Whiteside	Morrison	228	94 75	86 00	28	39 00	32 00	27	255 00	159 00			
Whiteside	Albany							16	373 00	325 00			
Will													
Williamson	Marion	138	84 50	46 50				38	525 00	501 25			
Winnebago	Rockford	210	204 00	166 00	3	29 00	7 00	17	730 00	625 00		75 00	61 15
Woodford	El Paso	294	188 50	147 50	10	24 00	15 00	23	625 00	625 00			
State Fair	Peoria	746	575 00	542 00	28	335 00	335 00	38	1,100 00	1,710 00	345	416 00	332 50
Total		20,456	$12,773 65	$9,408 49	316	$1,508 50	$940 00	2,555	$63,538 20	$52,926 96	1,242	$1,047 00	$830 38

Exhibit Illinois Agricultural Fairs, 1882—Continued.

Counties.	Location of Fair.	President.	Secretary.	Miscellaneous Exhibit.			Totals.		
				No. entries	Amount premiums offered.	Amount premiums paid.	No. entries	Amount premiums offered.	Amount premiums paid.
Adams	Camp Point	Geo W. Dean	Richard Seaton	117	$5 00	$5 00	2,529	$3,400 75	$2,767 50
Alexander									
Bond									
Boone	Belvidere	George Reed	A. E Jenner	39		2 50	656	1,991 50	1,106 50
Brown	Mt. Sterling	Charles M Dunlap	Geo W. Curry	13			1,324	2,833 50	2,368 25
Bureau	Princeton	G. N. Palmer	C. P. Bascom	41		80 00	1,451	4,057 50	2,947 00
Calhoun									
Carroll	Mt. Carrol	E. Bailey	Don R. Frazer	54	50 00	44 60	900	2,175 00	1,493 26
Cass	Virginia	John M. Epler	Geo. L Warlow			243 60	1,216	2,480 00	1,770 60
Champaign	Champaign	E E. Chester	E L. Dunlap				1,146	2,006 50	1,453 50
Christian									
Clark	Marshall	Thomas W. Cole	Walter Bartlett				205	940 50	123 80
Clay	Flora	J R. Tanner	W. R. Eaton				647	2,857 85	1,577 70
Clinton									
Coles	Charleston	William Millar	R. S. Hodgen				1,225	2,816 50	1,997 00
Cook									
Crawford	Robinson	Lewis E. Stevens	Ling. V. Chaffee				859	1,757 50	1,139 50
Cumberland									
DeKalb	Sycamore	Hiram Holcomb	B F. Wyman				383	1,332 00	552 00
DeKalb	Sandwich	J P. Adams	H. C Graves	71		467 95	229	1,278 50	1,078 95
DeWitt	Clinton	Jas A. Wilson	W B Rundle	10	20 00	7 50	847	2 121 50	1,116 25
Douglas	Tuscola	Isaac Cosler	Simeon Paddleford				352	2,045 00	793 15
DuPage	Wheaton	W. M. Crampton	A. D. Kelley				382	1,079 00	594 50
Edgar	Paris	W. O. Wilson	H B Adams				2,005	2,789 00	2,547 00
Edwards	Albion	Joseph Skeavington	Morris Emmerson				767	1,962 00	1,491 00
Effingham	Effingham	W. C Wright	Geo. M LeCrone				503	929 00	913 25
Fayette	Vandalia	M. F. Houston	Chas. H. Smith	45		22 50	865	1,427 25	368 50
Ford									
Franklin	Benton	William A King	John W Hill, Jr				730	1,757 00	1,592 50
Fulton	Avon	D H. Gorham	A J Churchill	215	75 00	46 00	1,912	3,064 00	2,161 00
Gallatin	Shawneetown	M M. Pool	John L Robinson				529	3,145 50	2,448 00
Greene	Carrollton	C. I. McCollister	N. J Andrews				3,403	2,920 00	2 393 50
Grundy									
Hamilton	McLeansboro	W. A. Coker	W A. McElvain				589	2,044 00	1,151 00
Hancock	Carthage	E. W. Bennett	Orville F Berry	60			1,511	2,590 70	1,838 75
Hancock	Warsaw	Isaac Bliss	James T Johnson	144	10 00	10 00	1,098	1,484 00	886 75
Hardin	Elizabethtown	R P. Hetherington	L. F. Twitchell		13 00	11 00	260	1,281 00	725 65
Henderson	Biggsville	Paul D. Salter	Robert A. McKinley	38		7 00	1,190	1,932 50	1,261 25

Exhibit Illinois Agricultural Fairs, 1882—Continued.

Counties.	Location of Fair.	President.	Secretary.	MISCELLANEOUS EXHIBIT.			TOTALS.		
				No. entries	Amount premiums offered.	Amount premiums paid.	No. entries	Amount premiums offered.	Amount premiums paid.
Henry	Cambridge	N. C. Gilbert	R. H. Hinman	35		$13 50	1,464	$3,758 00	$3,119 75
Iroquois	Watseka	Daniel Fry	Robert Hayes				631	2,182 00	1,183 00
Jackson	Murphysboro	G. G. Will	S. H. Winans	19	$14 00	15 00	649	1,705 75	891 00
Jackson	Carbondale	James M. Scurlock	Sam. T. Brush	10	120 00	60 00	881	2,779 25	2,102 50
Jasper	Newton	John Mason	W. E. Barrett				483	2,148 00	808 75
Jefferson	Mt. Vernon	I. G. Gee	John S. Bogan	7			758	2,654 85	2,039 50
Jersey	Jerseyville	Wm. H. Fulkerson	Morris R. Locke				2,594	4,331 50	3,813 00
JoDaviess	Galena	Geo. S. Avery	Frank Bostwick	161	68 00	85 00	567	1,893 00	1,290 00
JoDaviess	Warren	Robert Hawley	Joseph Hicks	3	27 00	26 00	477	1,208 45	946 10
Johnson									
Kane	Aurora	H. H. Evans	W. S. Beaupre	43	270 00	226 50	1,072	3,456 00	2,423 50
Kankakee	Kankakee	Milo Barnard	Henry S. Bloom	119		79 70	964	2,184 25	1,610 95
Kendall	Yorkville	A. Welch	Wm. Hill				520	1,240 75	702 50
Knox	Knoxville	D. M. Eiker	O. L. Campbell	100		50 00	2,330	2,680 00	1,400 00
Lake	Libertyville	R. H. French	C. F. Wright	55	25 00	17 25	865	969 25	650 00
Lake	Waukegan	John F. Powell	J. H. Bower	12	50 00	304 50	1,439	3,845 00	2,164 75
LaSalle	Mendota	A. C. McIntire	F. A. Newport			185 50	1,271	5,244 00	3,037 50
Lawrence									
Lee									
Livingston	Fairbury	John Virgin	Ed. Annable	59	127 00	65 00	1,600	4,118 00	2,385 50
Logan	Lincoln	Joseph Ream	T. H. Stokes				1,608	4,345 00	3,470 25
Logan	Atlanta	Ed. Stubblefield	J. P. Hieronymus	18	20 00	20 00	1,420	1,792 75	1,160 50
Macon	Decatur	J. G. Willard	C. M. Durfee		45 00	45 00	958	3,613 75	2,056 06
Macoupin	Carlinville	Joseph Bird	F. W. Burton	10	144 00	65 00	1,271	3,010 00	2,253 50
Madison									
Marion	Salem	A. Coffin	L. O. Vogt				538	1,390 10	747 40
Marion	Centralia	M. C. Kell	S. A. Frazier					2,153 00	1,529 65
Marshall	Wenona	W. H. H. Holdridge	Geo. G. McAdam				2,800	5,296 00	4,319 50
Mason	Havana	Walter S. Dray	S. F. Kyle				746	1,783 00	685 20
Massac	Metropolis	J. C. Willis	T. S. Stone				208	855 50	465 25
McDonough	Macomb	W. O. Blaisdell	I. M. Fellheimer	1	40 00	5 00	831	3,957 00	2,099 35
McHenry	Woodstock	Thos. McD. Richards	A. S. Wright	273	112 50	81 50	2,000	3,500 25	2,335 06
McHenry	Marengo	L. W. Sheldon	J. S. Rogers	36		170 50	1,049	1,763 25	1,216 25
McLean									
Menard									
Mercer	Aledo	A. B. Swisher	J. F. Henderson			8 35	1,503	2,751 25	2,084 85
Monroe									
Montgomery	Hillsboro	Moses Berry	Wm. K. Jackson				588	1,515 75	736 00

Morgan	Jacksonville	F. M. Morton	J. M. Dunlap	32	40 00	40 00	2,858	6,389 00	5,396 50
Moultrie	Sullivan	John T. Howell	S. M. Smyser				240	1,435 00	500 00
Ogle	Oregon	Simon Sheaff	Henry P. Lason	79	84 00	74 25	661	3,189 75	1,778 00
Peoria	State Fair	James R. Scott	S. D. Fisher						
Perry	Pinckneyville	W. K. Murphy	E. H. Lemen	20			659	2,057 50	1,454 50
Piatt	Monticello	J. W. Wanner	C. A. Tatman				404	2,172 00	1,149 00
Pike	Pittsfield	J. M. Bush	J. H. Crane	9	20 00	10 00	788	2,709 00	2,169 50
Pope	Golconda	Wm. S. Hodge	J. E. Y. Hanna	105		33 95	515	844 50	699 20
Pulaski									
Putnam									
Randolph	Sparta	E. B. McGuire	John G. Taylor				789	1,912 00	1,117 00
Randolph	Chester	Wm. A. Gordon	Wm. Schuchert	104	36 00	29 50	1,194	2,693 00	1,999 50
Richland	Olney	Isaac Welty	W. F. Beck				976	3,265 00	1,785 25
Rock Island	Port Byron	A. F. Hollister	L. S. Pearsall	10		13 00	456	800 00	500 00
Rock Island	Hillsdale	John A. Liphardt	G. W. Guernsey				558	659 25	358 65
Saline	Harrisburg	W. C. Burnett	F. M. Pickett	13	200 00	122 50	654	2,368 50	1,851 75
Saline	Eldorado	J. J. Jones	S. T. Weber	33	98 50	64 00	697	2,678 00	1,858 50
Sangamon	Springfield	George Pickrell	James A. Winston				2,281	6,961 00	5,202 50
Schuyler	Rushville	Robert B. McMaster	John S. Bagby				1,261	2,424 25	1,332 25
Scott									
Shelby	Shelbyville	John A. Tackett	Geo. A. Roberts			167 00	916	1,784 00	1,438 00
Stark	Wyoming	Winfield Scott	Albert W. King			70 00	1,810	3,570 50	2,590 24
Stark	Toulon	Henry Colwell	Chas. Myers				2,600	2,853 00	1,858 00
St. Clair	Belleville	Jos. Reichert	Don Turner	21			1,951	2,732 00	2,139 00
Stephenson									
Tazewell	Delavan	Ira B. Hall	G. W. Patten			4 75	1,956	2,920 00	2,012 75
Union	Jonesboro	L. J. Hess	Joseph H. Samson	158	27 00	106 25	1,533	1,894 50	1,570 50
Union	Anna	J. Hileman	C. E. Kirkpatrick	97		73 35	1,105	1,802 90	1,163 65
Vermilion	Catlin	J. H. Oakwood	G. W. F. Church	35			1,072	1,634 50	520 25
Vermilion	Hoopeston	J. A. Cunningham	Dale Wallace				825	2,669 00	1,764 88
Wabash									
Warren	Monmouth	Robert S. Patton	Geo. C. Bankin	15	38 00	28 00	1,749	3,269 50	2,575 00
Washington									
Wayne									
White	Carmi	O. Burrell	R. S. Organ	37			1,049	3,640 50	2,840 50
Whiteside	Sterling	R. B. Witmer	W. F. Eastman	77	263 50	235 00	1,359	3,034 00	2,108 95
Whiteside	Morrison	R. E. Logan	Ed J. Congar	39	240 00	224 74	1,398	1,968 25	1,479 24
Whiteside	Albany	E. H. Nevitt	J. F. Happer				422	941 50	648 75
Will									
Williamson	Marion	Geo. W. Young	J. M. Burkhart	6	6 00	2 00	450	1,634 00	1,149 40
Winnebago	Rockford	John C. Chappell	Henry P. Kimball	21		3 00	994	2,821 00	2,092 90
Woodford	El Paso	Edwin Hodgson	Walter Bennett	95	540 00	212 00	1,498	3,894 75	2,346 25
State Fair	Peoria	James R. Scott	S. D. Fisher			198 88	5.373	16,583 00	15,068 38
Fat Stock Show	Chicago	James R. Scott	S. D. Fisher			138 00	677	5,203 00	4.354 00
Total				2,814	$2,828 50	$4,321 12	107,526	$254,031 35	$177,207 41

FINANCIAL EXHIBIT ILLINOIS AGRICULTURAL FAIRS, 1882.

Counties.	Location of Fair	Amount in treasury last report	Amount received gate and entrance fees	Amount received booth rents and permits	Amount received sale shares stock	Amount received State appropriation	Amount received other sources	Amount paid in premiums	Amount paid real estate buildings, etc.	Amount paid current expenses not premiums	Amount paid on previous indebtedness	Amount remaining in treasury	Amount deficit the current year
Adams	Camp Point	$1,759 73	$4,425 20	$576 80	$10 00	$100 00	$255 30	$2,767 50	$823 39	$963 00		$2,573 14	
Alexander													
Bond													
Boone	Belvidere		2,239 05	239 00		100 00	115 75	1,106 50	195 96	1,234 18	$50 28	106 88	
Brown	Mt. Sterling		2,845 62	354 00	899 07	100 00	203 00	2,368 25		895 30	757 82	380 32	
Bureau	Princeton	51 77	4,102 65	391 50	30 00	100 00	415 52	2,947 00		1,272 74	836 10	35 60	
Calhoun													
Carroll	Mt. Carroll	153 76	2,089 08	581 33		100 00	106 95	1,493 26	500 00	850 00		187 86	
Cass	Virginia		1,097 00	163 50	178 10	100 00	719 29	1,770 00		487 29			
Champaign	Champaign		2,186 60	175 00	1,060 00	100 00	162 80	1,453 50	1,155 50	375 40	560 00	140 00	
Christian													
Clark	Marshall	26 00	500 00	28 00				123 80	191 54	232 67		5 99	
Clay	Flora	15 42	1,060 03	680 25	50 00		100 95	1,577 70		806 63	98 70	23 62	
Clinton													
Coles	Charleston		3,225 51	350 05		100 00	185 20	1,997 00	1,300 00	496 05	237 68		$169 97
Cook													
Crawford	Robinson	214 10	1,553 75	361 50				1,139 50	355 00	400 00	100 00	134 85	
Cumberland													
DeKalb	Sycamore		1,177 00	213 00		50 00	110 00	552 00	200 00	519 44	155 55	123 01	
DeKalb	Sandwich	37 44	2,106 65			50 00	17 56	1,078 95	809 84	382 86			
DeWitt	Clinton	23 58	1,708 60	684 00	70 00	100 00	17 00	1,116 25	400 00	1,059 46	68 00		40 53
Douglas	Tuscola	41 85	1,068 48	254 18		100 00		793 15	100 00	150 00	413 33	8 03	
DuPage	Wheaton	51 20	507 50	30 50	34 00	100 00	56 80	594 50		152 22	28 00	5 28	
Edgar	Paris	844 69	3,119 82	304 00		100 00	870 00	2,547 00		745 33		1,946 18	
Edwards	Albion	365 90	2,020 15	300 00	114 00	100 00	5 79	1,491 00	300 00	546 31		508 53	
Effingham	Effingham	786 65	200 00			100 00		913 25		333 40	100 00		200 00
Fayette	Vandalia		958 25			100 00		368 50		564 04		125 71	
Ford													
Franklin	Benton		2,100 50	340 35		100 00		1,592 50	302 35	240 00	256 00	150 00	
Fulton	Avon	433 88	2,631 95	376 75		50 00	153 60	2,161 00	156 84	972 09		356 25	
Gallatin	Shawneetown	250 00	2,548 05	505 00		100 00		2,448 00	481 00	409 05		5 00	
Greene	Carrollton	434 96	3,705 50	475 40		100 00	608 37	2,393 50	242 12	2,213 95	132 15	342 51	
Grundy													
Hamilton	McLeansboro	86 82	2,139 65	960 65		100 00		1,151 00	200 00	692 33	1,080 00	163 79	
Hancock	Carthage		4,655 70	298 00	6,603 40		164 00	1,838 75	7,087 18	1,425 30		1,369 87	
Hancock	Warsaw	586 00	1,701 00	200 00	3,200 00			886 75	4,300 00	300 00		210 25	
Hardin	Elizabethtown		1,004 95	167 50				725 65		305 76		131 04	
Henderson	Biggsville		1,251 10	245 75		100 00	223 75	1,261 25	80 00	385 00	94 35		
Henry	Cambridge	15 95	3,164 70	429 60		100 00	256 93	3,119 75	289 92	557 75		21	45

Iroquois	Watseka		1,149 25	563 25		100 00	5 00	1,183 00	396 46	238 04			
Jackson	Murphysboro		799 75	203 30		50 00	60 30	891 00	180 80	83 25	70 00		111 70
Jackson	Carbondale	175 68	2,658 43	342 00		50 00	81 00	2,102 50	240 70	468 93		494 98	
Jasper	Newton	53 14	1,647 55	449 00	35 00		75 25	808 75	329 65	300 80	615 89	204 85	
Jefferson	Mt. Vernon		3,046 85	1,101 50			969 09	2,039 50	835 94	1,090 00	959 69	212 31	
Jersey	Jerseyville		5,636 55	792 50	343 00	100 00	888 25	3,813 00		2,824 24	1,123 06		
JoDaviess	Galena		1,400 90	621 00		100 00	120 54	1,290 00	506 25	449 19			
JoDaviess	Warren		1,382 10	164 00		50 00	53 86	946 10		296 73	381 75	25 38	
Johnson													
Kane	Aurora	78 35	2,635 20	536 25		100 00	14 00	2,423 50		808 33		131 97	
Kankakee	Kankakee	359 19	2,129 60	174 25		100 00	60 00	1,610 95	451 08	729 32		31 09	
Kendall	Yorkville		1,169 50	50 00		100 00	75 00	702 50	300 00	491 56			99 56
Knox	Knoxville		2,111 00	100 00		100 00	711 00	1,400 00	711 00	186 00	60 00	665 00	
Lake	Libertyville	26 76	894 35	56 40			169 87	650 00	284 81	163 15		49 42	
Lake	Waukegan	325 31	2,440 24	289 00	50 00	100 00	150 00	2,164 75	567 95	332 73	480 00		190 88
LaSalle	Mendota		4,687 40	154 00	6,225 00		128 31	3,037 50	5,807 66	1,872 87		476 68	
Lawrence													
Lee													
Livingston	Fairbury		3,282 56	265 50		50 00	857 40	2,385 50		1,057 22	992 25	20 49	
Logan	Lincoln		4,516 48	377 50	112 50	50 00	200 00	3,470 25	650 00	685 73	450 50		
Logan	Atlanta	25 05	2,592 75	276 00		50 00	465 75	1,160 50	123 36	606 01	1,484 00	35 68	
Macon	Decatur		2,691 19	121 62		100 00	50 00	2,056 06	122 79	738 04	42 23	3 69	
Macoupin	Carlinville	816 14	2,411 05	816 00		100 00	501 40	2,253 50	227 10	1,369 45	170 65	623 89	
Madison													
Marion	Salem		481 65	377 50			181 45	747 40		281 40		11 80	
Marion	Centralia	141 22	1,679 60	692 50			353 33	1,529 65	469 65	796 35		71 00	
Marshall	Wenona	55 76	5,754 50	554 50	155 72		2,073 38	4,319 50	1,585 18	2,689 18			
Mason	Havana		867 55	253 50		100 00		685 20		955 20			419 35
Massac	Metropolis	792 60	378 55			100 00	109 90	415 25	737 40	104 00	43 85	30 55	
McDonough	Macomb	52 54	1,701 50	668 61		100 00	1,637 04	2,099 35		747 57	1,153 09	159 68	
McHenry	Woodstock		4,001 43	593 60				2,335 00	2,000 00	1,414 19			1,154 76
McHenry	Marengo		1,976 48	230 30			62 50	1,216 25		574 64	132 00	346 39	
McLean													
Menard													
Mercer	Aledo	441 92	3,246 13	750 16		100 00	1,841 15	2,034 85	3,290 97	799 79		253 75	
Monroe													
Montgomery	Hillsboro		1,186 00	128 00		100 00	86 00	736 00	171 23	592 67			
Morgan	Jacksonville		6,055 65	871 00		100 00	117 15	5,196 50	738 69	2,019 47			1,010 86
Moultrie	Sullivan		400 00	150 00			250 00	500 00	250 00		50 00		
Ogle	Oregon		2,812 86	531 25	350 00	100 00	314 97	1,778 00	1,476 25	857 56			2 73
Peoria	State Fair												
Perry	Pinckneyville	887 47	2,575 00	77 65		100 00		1,454 50	964 30	800 90		1,080 42	
Piatt	Monticello	2,164 02	3,196 47	1,050 00	40 00	100 00	51 00	1,149 00	2,641 41	1,158 46		1,632 62	
Pike	Pittsfield	93 01	3,114 35	784 25		100 00	619 35	2,169 50	1,252 60	1,024 86	264 00		
Pope	Golconda	340 20	1,293 90	212 00		100 00		699 20	180 00	246 80	340 20	479 90	
Pulaski													
Putnam													
Randolph	Sparta		1,498 35	186 25		100 00	51 00	1,117 00	150 00	568 60			
Randolph	Chester	315 85	2,984 30	780 75			55 00	1,999 50	175 00	619 60		1,341 80	
Richland	Olney	520 29	2,135 40	1,047 75		100 00		1,785 25	520 29	1,355 03		142 87	
Rock Island	Port Byron	38 50	762 60	205 00		50 00	227 85	500 00	240 00	518 20		25 75	
Rock Island	Hillsdale	67 84	329 50	209 75		50 00	6 45	358 65		210 75	20 00	74 14	

Financial Exhibit—Continued.

Counties.	Location of Fair.	Amount in treasury last report	Amount received gate and entrance fees	Amount received booth rents and permits	Amount received sale shares stock	Amount received State appropriation	Amount received other sources	Amount paid in premiums	Amount paid real estate, buildings, etc.	Amount paid current expenses not premiums	Amount paid on previous indebtedness	Amount remaining in treasury	Amount deficit the current year
Saline	Harrisburg	......	$1,950 60	$962 00	$40 00	......	$1,263 50	$1,851 75	$1,745 90	$568 45	$25 20	$24 80	......
Saline	Eldorado	$5 20	1,974 60	1,013 25	800 00	......	61 50	1,858 50	1,077 55	632 94	273 46	12 10	......
Sangamon	Springfield	33 62	6,092 70	1,178 50	......	$100 00	938 79	5,202 50	376 51	2,359 25	205 00	200 35	......
Schuyler	Rushville	......	1,812 51	......	......	100 00	78 35	1,332 25	184 35	438 65	35 61	......	......
Scott	......	......	......	......	......	......	......	......	......	......	......	......	......
Shelby	Shelbyville	387 81	1,714 45	207 35	70 00	100 00	......	1,438 00	625 00	385 14	......	31 47	......
Stark	Wyoming	3 41	3,685 10	530 00	......	......	291 11	2,590 24	600 00	429 41	585 30	304 67	......
Stark	Toulon	313 70	2,044 45	316 40	......	100 00	2,534 50	1,858 00	3,907 82	653 00	421 56	......	$1,531 33
St. Clair	Belleville	......	3,069 55	1,238 00	1,000 00	......	1,589 85	2,139 00	......	2,601 20	......	2,157 20	......
Stephenson	......	......	......	......	......	......	......	......	......	......	......	......	......
Tazewell	Delavan	......	3,042 75	224 00	......	100 00	366 90	2,012 75	1,547 57	89 40	83 93	......	......
Union	Jonesboro	22 00	1,886 90	410 35	......	100 00	......	1,570 50	......	647 00	......	201 75	......
Union	Anna	20 00	1,564 27	684 00	576 00	......	155 08	1,163 65	803 36	477 80	354 37	200 17	......
Vermilion	Catlin	......	1,709 75	320 15	......	33 33	217 41	520 25	......	781 39	958 00	21 00	......
Vermilion	Hoopeston	335 17	2,705 60	900 00	......	......	56 00	1,764 88	1,266 66	582 80	332 99	49 44	......
Wabash	......	......	......	......	......	......	......	......	......	......	......	......	......
Warren	Monmouth	......	3,938 75	326 61	180 00	100 00	......	2,575 00	......	1,292 90	500 00	177 46	......
Washington	......	......	......	......	......	......	......	......	......	......	......	......	......
Wayne	......	......	......	......	......	......	......	......	......	......	......	......	......
White	Carmi	......	4,001 55	1,391 95	......	100 00	244 50	2,840 50	1,000 00	859 00	1,038 50	......	......
Whiteside	Sterling	......	4,464 10	373 50	......	33 33	780 70	2,108 95	......	3,049 27	......	493 41	......
Whiteside	Morrison	......	2,277 00	847 94	......	33 33	......	1,479 24	523 95	1,312 41	901 77	1 90	1,061 00
Whiteside	Albany	3 08	840 70	499 74	......	33 34	......	648 75	100 00	542 89	......	85 22	......
Will	......	......	......	......	......	......	......	......	......	......	......	......	......
Williamson	Marion	89 32	1,654 40	410 00	......	100 00	......	1,149 40	310 57	519 72	......	274 03	......
Winnebago	Rockford	......	5,864 20	303 70	......	100 00	1,718 60	2,092 90	......	2,127 60	3,516 37	249 63	......
Woodford	El Paso	271 04	2,968 20	259 50	......	......	481 11	2,346 25	700 00	1,056 10	......	94 68	217 18
State Fair	Peoria	733 19	24,075 00	5,322 95	......	3,000 00	674 56	15,068 38	......	12,018 43	......	6,718 89	......
Fat Stock Show	Chicago	......	6,271 90	......	......	......	3,435 00	4,354 00	......	4,678 34	674 56	......	......
Totals	......	$16,168 08	$251,137 54	$45,855 29	$22,225 79	$9,083 33	$33,329 56	$177,207 41	$62,818 50	$91,257 45	$23 707 74	$29,018 79	$6,210 [illegible]

DEBT STATEMENT, ILLINOIS AGRICULTURAL FAIRS, 1882.

Counties.	Location of Fair.	Amount of deficit last report......	Amount of interest on debt....	Amount of deficit for 1882.........	Amount paid on debt............	Amount of present indebtedness............
Adams	Camp Point					
Alexander						
Bond						
Boone	Belvidere	$50 28			$50 28	
Brown	Mt. Sterling	1,786 20	$181 62		757 82	$1,210 00
Bureau	Princeton	3,840 00	286 10		836 10	3,290 00
Calhoun						
Carroll	Mt. Carroll	1,243 78	156 22			1,400 00
Cass	Virginia					
Champaign	Champaign					
Christian						
Clark	Marshall					
Clay	Flora	1,780 00	220 00			2,000 00
Clinton						
Coles	Charleston	2,486 15	237 68	$169 97	237 68	2,656 12
Cook						
Crawford	Robinson	300 00	101 40		100 00	301 40
Cumberland						
DeKalb	Sycamore	145 00	10 55		155 55	
DeKalb	Sandwich					
DeWitt	Clinton	850 00	68 00	40 53	68 00	890 53
Douglas	Tuscola	1,200 00	77 33		413 33	864 00
DuPage	Wheaton	350 00	28 00		28 00	350 00
Edgar	Paris					
Edwards	Albion					
Effingham	Effingham	100 00	10 60	20[illegible]	100 00	210 00
Fayette	Vandalia	431 86	54 18			486 04
Ford						
Franklin	Benton	240 00	16 00		256 00	
Fulton	Avon					
Gallatin	Shawneetown					
Greene	Carrollton					
Grundy						
Hamilton	McLeansboro	2,000 00	80 00		1,080 00	1,000 00
Hancock	Carthage					
Hancock	Warsaw					
Hardin	Elizabethtown					
Henderson	Biggsville	377 74	30 00		94 35	313 39
Henry	Cambridge	1,401 80	112 00	45		1,514 25
Iroquois						
Jackson	Murphysboro	949 21	70 00	111 70	70 00	1,060 91
Jackson	Carbondale					
Jasper	Newton	570 99	44 90		615 89	
Jefferson	Mt. Vernon	959 69			959 69	
Jersey	Jerseyville	1,858 01			1,123 06	734 95
Jo Daviess	Galena	1,945 00	156 00		45 00	2,056 00
Jo Daviess	Warren	630 01	51 75		381 75	300 01
Johnson						
Kane	Aurora					
Kankakee	Kankakee					
Kendall	Yorkville			99 57		99 56
Knox	Knoxville					
Lake	Waukegan		480 00	3,000 00	480 00	3,000 00
LaSalle	Mendota					
Lawrence						
Lee						
Livingston	Fairbury	2,400 00	192 25	175 00	992 25	1,775 00
Logan	Lincoln	1,938 01			450 50	1,487 51
Logan	Atlanta	1,400 00	84 00		1,484 00	
Macon	Decatur	527 98	42 23		42 23	527 98
Macoupin	Carlinville	170 65			170 65	

Debt Statement—Continued.

Counties.	Location of Fair.	Amount of deficit last report......	Amount of interest on debt....	Amount of deficit for 1882.........	Amount paid on debt.........	Amount of present indebtedness..........
Madison						
Marion	Salem					
Marion	Centralia					
Marshall						
Mason	Havana	$1,000 00	$70 00	$349 35		$1,419 35
Massac	Metropolis	543 00	43 85		$43 85	543 00
McDonough	Macomb	4,052 58				4,052 58
McHenry	Woodstock	3,061 90	190 00	1,154 76		4,406 66
McHenry	Marengo					
McLean						
Menard						
Mercer	Aledo	880 00				880 00
Monroe						
Montgomery	Hillsboro					
Morgan	Jacksonville	4,367 04	321 57	1,010 86		5,699 47
Moultrie	Sullivan					
Ogle	Oregon	410 27		2 73		413 00
Peoria	State Fair					
Perry	Pinckneyville					
Piatt	Monticello,					
Pike	Pittsfield	3,300 00	264 00	450 00	264 00	3,750 00
Pope	Golconda					
Pulaski						
Putnam						
Randolph	Sparta	1,750 00		420 00		2,170 00
Randolph	Chester	2,500 00				2,500 00
Richland	Olney					
Rock Island	Hillsdale	250 00	20 00		20 00	250 00
Saline	Harrisburg	1,600 00	129 20		25 20	1,704 00
Saline	Eldorado	2,851 40	131 80		273 46	2,709 74
Sangamon	Springfield	3,069 80	175 00		205 00	3,039 80
Schuyler	Rushville	457 47	27 44		35 61	449 30
Scott						
Shelby	Shelbyville					
Stark	Wyoming	2,750 00	185 30		585 30	2,350 00
Stark	Toulon	421 56		1,531 33	421 56	1,531 33
St. Clair	Belleville					
Stephenson						
Tazewell	Delavan	1,047 06	42 34		89 40	1,000 00
Union	Jonesboro					
Union	Anna	754 37	32 00		354 37	432 00
Vermilion	Catlin	1,041 38			958 00	83 38
Vermilion	Hoopeston	800 00	132 99		332 99	600 00
Wabash						
Warren	Monmouth	1,372 06			500 00	872 06
Washington						
Wayne						
White	Carmi	2,460 00			1,038 50	1,421 50
Whiteside	Sterling					
Whiteside	Morrison	862 93	38 84	1,061 00	901 77	1,061 00
Whiteside	Albany			175 00		175 00
Will						
Williamson	Marion					
Winnebago	Rockford	8,365 50	437 00	1,213 87	3,516 37	6,500 00
Woodford	El Paso	2,178 54	174 28	217 18		2,570 00
Totals		$84,079 22	$5,205 82	$11,383 29	$20,557 51	$80,110 82

FAIR ASSOCIATIONS, CAPITAL STOCK, REAL ESTATE, VALUE OF IMPROVEMENTS, ETC., 1882.

Counties.	Location of Fair.	Amount authorized capital stock.	Numb'r of shar's of stock issued	Amount of stock issued	Par value per share of stock	Numb'r of share-hold's or members	Cash value of real estate and improvements thereon	Number of volum's in Libra'y	Date of incorporation or organization.	Time of holding Fair in 1882.
Adams	Camp Point		493	$4,930 00	$10 00	344	$6,000 00		——, 1876	September 4, 5, 6, 7, 8
Alexander										
Bond										
Boone	Belvidere	$6,070 00	607	6,070 00	10 00	221	12,000 00		January 3, 1867	September 5, 6, 7, 8
Brown	Mt. Sterling	5,000 00	500	5,000 00	10 00	166	3,000 00			August 29, 30, 31, September 1, 2.
Bureau	Princeton						11,000 00		July 7, 1855	September 12, 13, 14, 15,
Calhoun										
Carroll	Mt. Carroll						3,500 00		——, 1856	September 12, 13, 14, 15
Cass	Virginia									September 12, 13, 14, 15
Champaign	Champaign	20,000 00	400	20,000 00	50 00	120	25,000 00		October 8, 1870.	August 29, 30, 31, September 1, 2.
Christian										
Clark	Marshall									September 27, 28, 29
Clay	Flora	25,000 00	1,000	25,000 00	25 00		5,000 00		June 4, 1873	September 26, 27, 28, 29
Clinton										
Coles	Charleston		99			85	8,000 00		——, 1841	September 20, 21, 22, 23
Cook										
Crawford	Robinson						800 00		——, 1855	October 3, 4, 5, 6
Cumberland										
DeKalb	Sycamore	2,650 00	130	2,650 00	5 00	132	300 00		March 12, 1870	September 19, 20, 21, 22.
DeKalb	Sandwich			4,700 00	10 00	470	6,000 00		——, 1860	September 12, 13, 14, 15, 16.
DeWitt	Clinton		414	4,140 00	10 00	222	4,400 00		October 4, 1882	August 22, 23, 24, 25
Douglas	Tuscola	6,000 00	188	2,350 00	12 50	45	3,600 00		August 26, 1872	September 13, 14, 15.
DuPage	Wheaton								——, 1853	September 6, 7, 8
Edgar	Paris		250	6,250 00	25 00	75	10,000 00		——, 1854	September 5, 6, 7, 8
Edwards	Albion									October 3, 4, 5, 6
Effingham	Effingham		217	1,085 00	5 00	198			May 13, 1880.	September 26, 27, 28, 29
Fayette	Vandalia		503	2,515 00	5 00	153	1,700 00		November 5, 1857	September 20, 21, 22.
Ford										
Franklin	Benton						2,000 00			October 17, 18, 19, 20
Fulton	Avon	10,000 00	254	6,350 00	25 00	125	6,500 00		——, 1872	September 12, 13, 14, 15
Gallatin	Shawneetown	4,000 00	400	4,000 00	10 00	40	7,000 00		——, 1872	August 29, 30, 31, September 1,
Greene	Carrollton	8,000 00	121	6,050 00	50 00	87	8,600 00		March 20, 1875	October 17, 18, 19, 20
Grundy										
Hamilton	McLeansboro	2,500 00	25	2,500 00	100 00	16	8,000 00		July 29, 1880.	October 10, 11, 12, 13.
Hancock	Carthage	8,000 00	450	5,500 00	10 00	400	6,000 00		January 3, 1882	September 11, 12, 13, 14, 15.
Hancock	Warsaw	4,000 00	400	4,000 00	10 00	400	4,000 00		October, 1881	September 5, 6, 7, 8
Hardin	Elizabethtown	880 00	176	880 00	5 00	76	2,500 00	100		September 27, 28, 29, 30.
Henderson	Biggsville					325	3,500 00		——, 1855	September 12, 13, 14, 15

Fair Associations, Capital Stock, Etc., 1882—Continued.

Counties.	Location of Fair.	Amount authorized capital stock	Numb'r of shar's of stock issued	Amount of stock issued	Par value per share of stock	Numb'r of share-hold's or members	Cash value of real estate and improvements thereon	Number of volum's in Libra'y	Date of incorporation or organization.	Time of holding Fair in 1882.
Henry	Cambridge	$10,000 00	396	$1,980 00	$5 00	65	$10,000 00		September 1, 2, 1872	September 4, 5, 6, 7, 8
Iroquois	Watseka									August 14, 15, 16, 17, 18
Jackson	Murphysboro	5,000 00	200	5,000 00	25 00	50	5,600 00		July 19, 1869	September 27, 28, 29, 30
Jackson	Carbondale	5,000 00	79	3,950 00	50 00	52	4,500 00		November 20, 1879	October 10, 11, 12, 13
Jasper	Newton	3,000 00	300	3,000 00	10 00	100	3,500 00		April 20, 1880	September 19, 20, 21, 22
Jefferson	Mt. Vernon	6,000 00	60	6,000 00	100 00	15	6,000 00		May 18, 1879	October 10, 11, 12, 13, 14, 15
Jersey	Jerseyville	20,000 00	513	12,825 00	25 00	413	20,788 76	91	April 13, 1868	October 10, 11, 12, 13
JoDaviess	Galena	25,000 00	2,200	11,000 00	5 00	200	10,900 00		——, 1856	September 5, 6, 7, 8
JoDaviess	Warren	10,000 00	488	10,000 00	20 00	46	4,000 00	4	——, 1869	September 12, 13, 14, 15
Johnson										
Kane	Aurora									September 26, 27, 28, 29
Kankakee	Kankakee						4,000 00		September, 1855	September 12, 13, 14, 15
Kendall	Yorkville						3,000 00		——, 1852	September 5, 6, 7, 8
Knox	Knoxville					250	6,000 00			September 4, 5, 6, 7, 8
Lake	Libertyville								——, 1851	October 5, 6, 7
Lake	Waukegan	12,000 00	320	8,000 00	25 00	80	18,000 00		June 5, 1871	September 25, 26, 27, 28, 29, 30
LaSalle	Mendota	7,000 00	249	6,225 00	25 00	240	5 807 00		March 4, 1882	September 4, 5, 6, 7, 8, 9
Lawrence										
Lee										
Livingston	Fairbury	6,000 00	216	5,233 00	25 00	200	9,000 00		March 25, 1876	September 4, 5, 6, 7, 8
Logan	Lincoln	12,100 00	485	9,625 00	20 00		12,500 00		July 2, 1872	August 28, 29, 30, 31, September 1
Logan	Atlanta	20,000 00	292	5,840 00	20 00	182	9,000 00	54	February 15, 1861	September 5, 6, 7, 8
Macon	Decatur						5,000 00	100	——, 1857	September 5, 6, 7, 8
Macoupin	Carlinville	6,500 00	260	6,500 00	25 00	245	6,000 00	25	April 29, 1880	September 5, 6, 7, 8
Madison										
Marion	Salem	500 00	20	500 00	25 00	16	2,000 00		March 12, 1881	September 19, 20, 21, 22
Marion	Centralia	5,000 00	493	4,940 00	10 00		10,000 00		May 13, 1876	September 27, 28, 29, 30
Marshall	Wenona	20,000 00	315	7,500 00	75 00	315	14,000 00		July 15, 1871	September 18, 19, 20, 21, 22
Mason	Havana	5,000 00							March 30, 1872	September 5, 6, 7, 8, 9
Massac	Metropolis	6,000 00	26	2,600 00	100 00	17	4,000 00			October 13, 14, 15, 16
McDonough	Macomb		684	3,420 00	5 00	102	10,000 00		——, 1854	August 28, 29, 30, 31, September 1
McHenry	Woodstock						12,000 00		May, 1852	September 12, 13, 14, 15
McHenry	Marengo	2,200 00	220	2,200 00	10 00	79	3,000 00		——, 1876	September 19, 20, 21, 22
McLean										
Menard										
Mercer	Aledo						6,000 00		March, 1854	September 19, 20, 21, 22
Monroe										

Montgomery	Hillsboro						2,500 00		——, 1854	September 26, 27, 28, 29
Morgan	Jacksonville	10,000 00	374	7,480 00	20 00		18,000 00		August 31, 1851	August 21, 22, 23, 24, 25
Moultrie	Sullivan								September, 1855	September 26, 27, 28, 29
Ogle	Oregon	10,000 00	776	3,880 00	5 00	86	5,000 00			September 19, 20, 21, 22
Peoria	State Fair									
Perry	Pinckneyville						9,000 00			October 3, 4, 5, 6
Piatt	Monticello		723	3,615 00	5 00	382	6,000 00		——, 1856	August 14, 15, 16, 17, 18
Pike	Pittsfield						6,000 00			September 26, 27, 28, 29
Pope	Golconda					295	3,000 00		——, 1859	October 4, 5, 6, 7
Pulaski										
Putnam										
Randolph	Sparta									September 27, 28, 29
Randolph	Chester	10,000 00	500	5,000 00	10 00	76	12,550 00		August 12, 1874	October 17, 18, 19, 20
Richland	Olney									September 12, 13, 14, 15, 16
Rock Island	Port Byron				15 00	28	800 00		——, 1876	September 6, 7, 8
Rock Island	Hillsdale					26	1,000 00	30	January 1, 1870	August 30, 31, September 1
Saline	Harrisburg	5,000 00	361	3,610 00	10 00	46	6,965 00		February 10, 1880	October 10, 11, 12, 13
Saline	Eldorado	7,000 00	386	3,860 00	10 00	98	6,416 55		January 9, 1881	September 19, 20, 21, 22
Sangamon	Springfield	25,000 00	489	12,225 00	25 00	489	8,000 00	50	October 7, 1852	September 18, 19, 20, 21, 22, 23
Schuyler	Rushville					600	2,500 00		——, 1856	September 19, 20, 21
Scott										
Shelby	Shelbyville	5,000 00	352	3,520 00	10 00	110	4,000 00		June 6, 1857	September 26, 27, 28, 29, 30
Stark	Wyoming	10,000 00	442	10,420 00	8 00	221	13,204 48	2	January 24, 1881	September 11, 12, 13, 14, 15
Stark	Toulon						18,000 00		——, 1853	September 19, 20, 21, 22
St. Clair	Belleville	1,000 00	40	1,000 00	25 00	17			April 17, 1882	October 10, 11, 12, 13
Stephenson										
Tazewell	Delavan	6,000 00	567	5,670 00	10 00	309	7,000 00		July 5, 1879	September 18, 19, 20, 21, 22
Union	Jonesboro						3,000 00		——, 1855	September 12, 13, 14, 15, 16
Union	Anna	10,000 00	507	5,070 00	10 00	226	6,000 00		December 15, 1879	August 29, 30, 31, September 1
Vermilion	Catlin						200 00		——, 1851	September 26, 27, 28, 29
Vermilion	Hoopeston	5,000 00	337	3,337 00	10 00	125	5,000 00		July 14, 1873	August 28, 29, 30, 31, September 1
Wabash										
Warren	Monmouth					276	6,500 00		August 7, 1852	September 5, 6, 7, 8
Washington										
Wayne										
White	Carmi	4,000 00	400	4,000 00	10 00	201	12,000 00		May 23, 1879	September 5, 6, 7, 8, 9
Whiteside	Sterling					85	200 00		——, 1855	September 12, 13, 14, 15
Whiteside	Morrison					1,000	3,790 02		——, 1872	September 5, 6, 7, 8
Whiteside	Albany								September 8, 1875	August 23, 24, 25
Will										
Williamson	Marion									September 26, 27, 28, 29
Winnebago	Rockford	8,000 00	1,563	7,815 00	5 00	180	40,000 00		February 15, 1855	September 11, 12, 13, 14, 15
Woodford	El Paso	5,000 00	441	4,410 00	10 00	299	6,000 00		January 12, 1880	September 11, 12, 13, 14, 15
Totals		$419,400 00	22,701	$315,210 00	$1,190 50	11,548	$563,621 81	456		

REPORT OF PURE-BRED STOCK EXHIBITED AT ILLINOIS AGRICULTURAL FAIRS—1882.

Counties.	SHORTHORN CATTLE.					HEREFORD.					DEVON.					POLLED ANGUS.				
				Owned in County.					Owned in County.					Owned in County.					Owned in County.	
	No. of entries...	Amount of premiums offered ..	Amount of premiums paid......	Number of entries ...	Amount of premiums paid.......	No. of entries ..	Amount of premiums offered...	Amount of premiums paid	Number of entries....	Amount of premiums paid.	No. of entries ..	Amount of premiums offered..	Amount of premiums paid.	Number of entries. ..	Amount of premiums paid	No. of entries ...	Amount of premiums offered ..	Amount of premiums paid.......	Number of entries. ..	Amount of premiums paid.......
Adams	22	$169	$142	22	$142		$169													
Alexander																				
Bond																				
Boone		49				1	49	$3	1	$3		$37								
Brown	39	157	148																	
Bureau	24	164	137	16	72		101										$101			
Calhoun																				
Carroll	21	101	97	21	97															
Cass	18	287	269	18	269															
Champaign	8	172	68	8	68															
Christian																				
Clark	15	245	24	8	5															
Clay	7	75	54	7	54		64					64								
Clinton																				
Coles	26	259	249	13	79		274													
Cook																				
Crawford	10	120	68	1	10															
Cumberland																				
DeKalb, Sycamore	24	87	57	12	25		87					87					87			
DeKalb, Sandwich	1		6		6															
DeWitt	34	160	101																	
Douglas		189	70		70															
DuPage	13	54	28																	
Edgar	41	415	390	30	345															
Edwards	17	63	4	17	54						10	63	$44	10	$14					
Effingham	6	52	33	6	33															
Fayette		57		7	15															
Ford																				
Franklin	14	42	33	14	33						6	42	18							
Fulton, Avon	29	120	103								13	120	81			1	120	$8		
Gallatin	20	174	159	2	5															
Greene	21	100	83	11	23		100					60								
Grundy																				
Hamilton	9	64	31																	

Hancock, Warsaw	17	60	60	17	60		51					51								
Hardin																				
Henderson	26	94	94	26	94	6	94	32	6	32										
Henry	14	201	169	6	63	12	84	68	12	68										
Iroquois		209	190																	
Jackson, Murphysboro											2	39	2	2	2					
Jackson, Carbondale	1	129	8	1	8															
Jasper	29	392	88	18	58						2	77	10	2	10					
Jefferson	27	159	143	27	143															
Jersey																				
JoDaviess, Galena	9	110	49	9	49															
JoDaviess, Warren	15	75	59	15	59															
Johnson																				
Kane	43	81	70	10	22	12	81	48	12	48		81					81			
Kankakee	13	67	45	13	45															
Kendall	32	43	39	32	39		43					43								
Knox	20	150	150	20	150		100				20	150	150	20	150		100			
Lake, Libertyville	14	41	27	14	27						2	40	6	2	6					
Lake, Waukegan	12	73	42	12	42		73					73				8	73	42	8	$42
LaSalle	42	522	268	42	268		63					63					63			
Lawrence																				
Lee																				
Livingston	14	110	76	14	76		110				9	84	39	9	39		84			
Logan, Lincoln	23	70	66	10	9															
Logan, Atlanta	20	70	59																	
Macon																				
Macoupin	6	152	69	6	69															
Madison																				
Marion, Centralia	18	100	63																	
Marshall	50	158	158								6	93	43							
Mason																				
Massac																				
McDonough																				
McHenry, Woodstock	38	72	48	38	48	4	72	21	4	21		72				7	72	18	7	18
McLean																				
Menard																				
Mercer	15	111	85	15	85	2	111	20	2	20										
Monroe																				
Montgomery						5	52		5	47	3	26		3	17					
Morgan	30	355	325	17	167		144										144			
Moultrie	10	200	75	10	75															
Ogle, Oregon	11	60	33	11	33		60					52					60			
Peoria																				
Perry	18	57	56	18	56															
Piatt	42	335	291	18	53															
Pike	17	202	146	15	146															
Pope																				
Pulaski																				
Putnam																				
Randolph, Sparta	16	80	8								1	80	8							
Richland	30	172	127	12	45		90				2	142	9	1	4					
Rock Island, Port Byron	10	37	22	10	22		20					20								

Report of Pure-Bred Stock—Continued.

Counties.	SHORTHORN CATTLE.					HEREFORD.					DEVON.					POLLED ANGUS.				
	No. of entries	Amount of premiums offered	Amount of premiums paid	Owned in County.		No. of entries	Amount of premiums offered	Amount of premiums paid	Owned in County.		No. of entries	Amount of premiums offered	Amount of premiums paid	Owned in County.		No. of entries	Amount of premiums offered	Amount of premiums paid	Owned in County.	
				Number of entries	Amount of premiums paid				umber of entries	Amount of premiums paid				Number of entries	Amount of premiums paid				Number of entries	Amount of premiums paid
Rock Island, Hillsdale	4	$27	$9	4	$9		$27				2		$6	2	$6					
Saline, Harrisburg											16	$64	63							
Saline, Eldorado	12	60	42																	
Sangamon	38	230	205	19	70	65	230	$230	3											
Schuyler	23	153	105	23	105															
Scott																				
Shelby	28	171	161	16	29															
Stark, Wyoming	19	118	108			2	68	18				63								
Stark, Toulon	21	114	89	5	18	2	114	12	2	12		114								
St. Clair	13	64	40	13	40		64													
Stephenson																				
Tazewell	11	111	32	5	32															
Union, Anna	18	66	33	11	33						5	66	13	3	13					
Vermilion, Catlin	53	152	56	18	56															
Vermilion, Hoopeston		324	324	15	97	20	324	175									$100			
Wabash	18																			
Warren		129	121	18	121															
Washington	3																			
Wayne	36																			
White		152	152	11	36															
Whiteside, Sterling							121		43	121										
Whiteside, Morrison	35	69	69			1	69	10												
Whiteside, Albany	14	65	52	14	52							25								
Will																				
Williamson	7	70	21		21						10	70	19		19					
Winnebago	8	55	22	8	22	14	55	43	14	43		55								
Woodford	63	180	151	12	90		150				7	150	50			4	90	$12	4	$12
Total	1527	$10,432	$7,404	861	$4,247	146	$3,314	$680	104	$415	116	$2,266	$561	54	$310	20	$1,175	$80	19	$72

Report of Pure-bred Stock—Continued.

Counties.	HOLSTEIN.					AYRSHIRE.					JERSEY.				
	Number of entries.	Amount premiums offered.	Amount premiums paid.	Owned in county		Number of entries.	Amount premiums offered.	Amount premiums paid.	Owned in county		Number of entries.	Amount premiums offered.	Amount premiums paid.	Owned in co'nty	
				No. of entries.	Am't prem's paid.				No. of entries.	Am't prem's paid.				No. of entries	Am't prem's paid.
Adams	9	$169	$81	9	$81						7	$93	$40	7	$40
Alexander															
Bond															
Boone		37									6	37	13	6	13
Brown															
Bureau		101					$25				22	164	118	22	118
Calhoun															
Carroll	4	47	9	4	9						3	47	6	3	6
Cass															
Champaign											1	116	5	1	5
Christian															
Clark															
Clay							64				2	64	20	2	20
Clinton															
Coles		105					69				4	69	22	4	22
Cook															
Crawford											3	65	18	3	18
Cumberland															
DeKalb—Sycamore		87					87					87			
DeKalb—Sandwich	18		50		50						8		31		16
DeWitt															
Douglas															
DuPage	4	54	22			10	17	17							
Edgar											13	54	54	13	54
Edwards											3	48	11	3	11
Effingham											7	38	34	7	34
Fayette		55		19	15							32		8	16
Ford															
Franklin											1	39	3	1	3
Fulton															
Gallatin											24	174	149	13	25
Greene											1	30	10	1	10
Grundy															
Hamilton											7	69	16	6	14
Hancock—Warsaw		51									24	61	48	24	48
Hardin															
Henderson	1	94	10	1	10										
Henry		60				2	60	16	2	16	5	60	20	5	20
Iroquois															
Jackson—Carbondale											9	129	50	9	50
Jasper											12	83	23	12	23
Jefferson											10	55	34	10	34
Jersey															
JoDaviess															
Johnson															
Kane	7	81	33	7	33		81				3	81	20	3	20
Kankakee	6	25	25	6	25						4	25			
Kendall		43										43			
Knox		100					100				3	100	10	3	10
Lake—Libertyville	13	38	23	13	23						9	28	13	9	13
Lake—Waukegan	3	73	12				73				15	73	32	15	32
LaSalle		63					63				26	63	48	14	30
Lawrence															
Lee															
Livingston	14	84	50	2	14		84				4	84	28	4	20
Logan—Lincoln						2	70	9	2	9	3	70	22	3	22
Logan—Atlanta						2	63	7			2	68	15		
Macon															
Macoupin											5	30	30	5	30

Report of Pure-bred Stock—Continued.

Counties.	HOLSTEIN.					AYRSHIRE.					JERSEY.				
	No. of entries	Amount premiums offered	Amount premiums paid	Owned in county		No. of entries	Amount premiums offered	Amount premiums paid	Owned in county		No. of entries	Amount premiums offered	Amount premiums paid	Owned in county	
				No. of entries.	Am't pr'mium paid				No. of entries.	Am't pr'mium paid				No. of entries.	Am't pr'mium paid
Madison															
Marion—Centralia											1	70	8		
Marshall	12	93	69			14	93	72			21	93	63		
Mason															
Massac															
McDonough															
McHenry—Woodstock	4	72	15	4	15	6	72	19	6	19	5	72	10	5	10
McLean															
Menard															
Mercer												55			
Monroe															
Montgomery															
Morgan															
Moultrie															
Ogle—Oregon		60					51					51			
Peoria															
Perry															
Piatt											5	70	30	5	30
Pike	5	40	40												
Pope															
Pulaski															
Putnam															
Randolph—Sparta							80				13	80	47		
Richland											17	154	61	8	25
Rock Island—Port Byron	1	20	2	1	2		20				8	20	15	8	15
Rock Island—Hillsdale		27									1	27	3	1	3
Saline—Eldorado											18	60	46	10	18
Sangamon											46	230	210	40	180
Schuyler											9	90	46	9	46
Scott															
Shelby											3	71	14	3	14
Stark—Wyoming	2	54	14								7	68	92		
Stark—Toulon	4	114	25	4	25		114				6	114	35	6	35
St. Clair	4	64	13	4	13						18	64	50	18	50
Stephenson															
Tazewell	2	111	13	2	13	12	111	56	12	56	48	111	99	48	99
Union—Anna											9	66	42	6	20
Vermilion—Hoopeston		100										35			
Wabash															
Warren											3	78	23	3	23
Washington															
Wayne															
White															
Whiteside—Sterling		121					121					121		15	99
Whiteside—Morrison	7	69	42								2	69	14		
Whiteside—Albany							25				1	25	5	1	5
Will															
Williamson											1	70	8		8
Winnebago	6	55	26				55				17	55	41	17	41
Woodford	9	90	64				90					90			
Total	135	$2,457	$638	76	$328	48	$1,688	$196	22	$100	505	$4,383	$1,897	419	$1,498

Report of Pure-bred Stock—Continued.

Counties.	THOROUGHBRED HORSES.					ROADSTERS.					NORMAN AND FRENCH DRAFT.					CLYDESDALE & ENGLISH DRAFT				
	No. of entries....	Amount of premiums offered....	Amount of premiums paid	Owned in county.		No. of entries....	Amount of premiums offered....	Amount of premiums paid	Owned in county.		No. of entries	Amount of premiums offered...	Amount of premiums paid	Owned in county.		No. of entries ...	Amount of premiums offered...	Amount of premiums paid	Owned in county.	
				Number of entries ...	Amount of premiums paid.......				Number of entries ...	Amount of premiums paid... ...				Number of entries ...	Amount of premiums paid.......				Number of entries ...	Amount of premiums paid ......
Adams						70	$555	$555	49	$220	29	$161	$134	23	$89					
Alexander																				
Bond																				
Boone		40																		
Brown						45	135	122	19	71	23	135	93	21	88					
Bureau						49	153	130	49	130	18	131	81	18	81	27	$131	$104	27	$104
Calhoun																				
Carroll	2	$34	$11	2	$11	24	76	50	21	50	4	70	18	4	18					
Cass						42	138	126	28	118										
Champaign	25	103	74	20	74	27	71	60	20	58	53	71	69	49	69					
Christian																				
Clark																				
Clay	1	88	10													13	112	51	13	51
Clinton																				
Coles						101	661	628	75	400	2	40	20	1			40			
Cook																				
Crawford						9	51	39	9	39										
Cumberland																				
DeKalb, Sycamore						11	86	34	11	34										
DeKalb, Sandwich						22		64		36	14		64		32					
DeWitt																				
Douglas		300	100		100															
DuPage											4	70	9							
Edgar	6	30	30	4	30															
Edwards																				
Effingham	4	54	16	4	16	9	54	45	9	45						12	67	36	12	36
Fayette		73		3	4		26		6	13		64		36	31					
Ford																				
Franklin	15	91	59	4	8	24	30	30	4	10										
Fulton, Avon						32	107	96								6	48	32		
Gallatin	12	190	100	4	30											41	265	170	8	21
Greene	11	101	48	9	43	64	104	104	57	84	35	104	100	31	93					
Grundy																				

Report of Pure-bred Stock—Continued.

Counties.	THOROUGHBRED HORSES.					ROADSTERS.					NORMAN AND FRENCH DRAFT					CLYDESDALE & ENG. DRAFT.				
	No. of entries	Amount of premiums offered	Amount of premiums paid	Owned in county. Number of entries	Owned in county. Amount of premiums paid	No. of entries	Amount of premiums offered	Amount of premiums paid	Owned in county. Number of entries	Owned in county. Amount of premiums paid	No. of entries	Amount of premiums offered	Amount of premiums paid	Owned in county. Number of entries	Owned in county. Amount of premiums paid	No. of entries	Amount of premiums offered	Amount of premiums paid	Owned in county. Number of entries	Owned in county. Amount of premiums paid
Hamilton																				
Hancock, Warsaw						65	$347	$285	65	$285						16	$52	$30	16	$30
Hardin																				
Henderson	2	$18	$18								17					13				
Henry							165	100									135	101		
Iroquois							65	30				$75	$67				60	18		
Jackson, Murphysboro	3	101	5	3	5															
Jackson, Carbondale											10	255	110							
Jasper	4	86	18	4	48	18	143	98	16	88	6	166	42	6	$42					
Jefferson	9	97	37	7	19	23	62	62	17	20						29	123	89	29	89
Jersey	6	40	40	2		101	195	175	51	80										
JoDaviess, Galena											16	50	50	16	50					
JoDaviess, Warren						15	28	20	15	20										
Johnson																				
Kane						34	75	68	30	60	5	40	23	5	23	12	80	30	10	26
Kankakee						23	53	46	19	34	6	42	12	6	12	1	42	8	1	8
Kendall		36				44	55	39	44	39										
Knox	7	78	40	7	40	53	75	75	53	75	30	75	75	30	75	15	75	40	15	40
Lake, Libertyville	1	6	4	1	4	18	18	18	18	18	2	6	6	2	6					
Lake, Waukegan						51	83	83	51	83	4	83	19	3	9	12	83	61	12	61
LaSalle		95				49	204	179	37	136	29	298	204	20	186	20	113	73	16	65
Lawrence																				
Lee																				
Livingston, Fairbury	12	134	52	9	29						11	239	87			24	239	127	4	27
Logan, Lincoln	12	87	43	3	18	41	87	62	34	45										
Macon																				
Macoupin	2	70	10	1		71	167	167	36	92										
Madison																				
Marion, Centralia	2	30	20			8	61	48			17	92	47							
Marshall	6	95	44			36	113	108			10	113	50			12	113	69		
Mason	3	93	19	3	19	15	68	58	3	2	1	76	10	1	10					
Massac																				
McDonough																				

McHenry, Woodstock						132	196	139	128	119	21	196	74	21	74					
McLean																				
Menard																				
Mercer						77	129	109	77	109						33	129	86	33	86
Monroe																				
Montgomery	1	49		1	10	5	200	185	3	100						2	76		2	20
Morgan						83	2,584	2,534	9	122										
Moultrie																				
Ogle		76				50	105	93		88	17	79	30		30					
Peoria																				
Perry	3	98	31	3	31	19	42	42	19	42						9	128	66	9	66
Piatt	76	320	267	51	107															
Pike						149	428	385	73	226										
Pope																				
Pulaski																				
Putnam																				
Randolph, Sparta											30	137	117							
Richland																				
Rock Island, Hillsdale	27	109	66	27	66	15	68	39	15	39	12	41	26	12	27					
Saline, Harrisburg	11	81	59																	
Saline, Eldorado	9	111	53																	
Sangamon	18	205	115	12	85	52	205	180	12	110										
Schuyler						26	110	80	22	53										
Scott																				
Shelby	2	45	45	2	45						2	45	45	2	45					
Stark, Wyoming						29	204	173			32	143	60			25	143	95		
Stark, Toulon						31	375	273	26	198										
St. Clair																				
Stephenson																				
Tazewell	2	99	10			53	99	114	33	76	27	49	40	20	35	29	49	40	22	30
Union																				
Vermilion, Catlin																61	133	66	61	66
Vermilion, Hoopeston						57	112	112	15	9	44	147	141	8	19	47	128	128	12	29
Wabash																				
Warren	8	61	53	8	53	67	228	202	59	190						41	191	148	35	121
Washington																				
Wayne																				
White	16	170	120	5	55	40	130	130	10	25	56	180	135	22	52		360			
Whiteside, Sterling												20		3	15					
Whiteside, Albany	3	12	12	3	12															
Will																				
Williamson	1	88	15		15															
Winnebago	8	68	34	8	34	27	68	54	26	46										
Woodford	25	88	53	8	16	43	100	68	25	33	11	112	47	11	47	10	112	27	4	9
Total	355	$3,850	$1,761	218	$1,027	2149	$9,694	$8,716	1401	$3,970	598	$3,605	$2,105	371	$1,257	510	$3,217	$1,695	341	$985

Report of Pure-bred Stock—Continued.

Counties.	COTSWOLD SHEEP.					LEICESTER AND OTHER LONG WOOLS.					SOUTHDOWNS.				
	Number of entries	Amount of premiums offered	Amount of premiums paid	Owned in county.		Number of entries	Amount of premiums offered	Amount of premiums paid	Owned in county.		Number of entries	Amount of premiums offered	Amount of premiums paid	Owned in county.	
				Number of entries ..	Amount of premiums paid				Number of entries ..	Amount of premiums paid				Number of entries ..	Amount of premiums paid ....
Adams	25	$50	$50	25	$50						14	$50	$37	14	$37
Alexander..															
Bond															
Boone.						16	23	18	6	5					
Brown						29	44	34	11	8	9	44	30	5	13
Bureau						36	192	120	36	120					
Calhoun															
Carroll.......						10	26	21	10	21					
Cass	21	35	35	11	28						10	30	26	9	21
Champaign .						53	34	24	53	24					
Christian															
Clark.........	1	12		1	1						5	19	4		
Clay..........						9	24		4	4					
Clinton															
Coles						28	28	28	28	28	16	28	27	9	11
Cook															
Crawford						5	31	19	6	19	5	31	66		
Cumberland.															
DeKalb— Sycamore..						4	33	18	4	18					
De Witt.......						9	27	19			15	27	22		
Douglas......							26	2		2					
DuPage......						12	22	22							
Edgar.... ...						21	30	30	18	15					
Edwards.....	13	22	19		13 19										
Effingham ...	3	25	18	3	18	4	25	16	4	16					
Fayette		27			32 15							27		6	7
Ford															
Franklin.....	2	6	6	2	6	1	6	3	1	3	2	6	6	2	6
Fulton— Avon						12	22	22							
Gallatin	16	30	2												
Greene........						30	38	38	13	25	23	38	35	16	31
Grundy															
Hamilton.. ..						20	27	27	12	12	7	27	12	7	12
Hancock— Warsaw ..						7	45	15	7	15					
Hardin........															
Henderson ..															
Henry	5	30	23	5	23						3	30	16	3	16
Iroquois							26	26				46	46		
Jackson— Murp'sb'ro.						6	17	16	6	16					
Jackson— Carbondale	15	40	31	12	17		40				1	40	5	1	5
Jasper	8	72	20	8	20										
Jefferson.....	10	34	34	10	34	5	34	19	5	19	7	34	21		
Jersey..... ..															
JoDaviess— Galena	10	29	15	10	15	11	29	14	11	14					
JoDaviess— Warren.. ..	16	24	24	16	24										
Johnson															
Kane						23	40	40	18	33					
Kankakee....	4	34	20	4	20	11	34	32	4	12					
Kendall......						12	23	16	12	16					
Knox	31	95	90	31	90	10	95	40	15	40					
Lake— Libertyv'le						25	39	39	25	39					
Lake— Waukegan.	7	45	26	7	26	7	45	28	7	28	6	45	25	6	25
LaSalle......	14	72	72	7	30	12	72	64	5	28	4	36	14		
Lawrence....															

Report of Pure-bred Stock—Continued.

Counties.	COTSWOLD SHEEP.					LEICESTER AND OTHER LONG WOOLS.					SOUTHDOWNS.				
	Number of entries	Amount of premiums offered	Amount of premiums paid	Owned in county. Number of entries	Owned in county. Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Owned in county. Number of entries	Owned in county. Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Owned in county. Number of entries	Owned in county. Amount of premiums paid
Lee															
Livingston						7	48	36	7	36	4	48	16	4	16
Logan—Lincoln						10	31	28			36	31	31	7	7
Macon															
Macoupin	16	56	41	16	41						13	56	36	13	36
Madison															
Marion—Centralia	5	12	12								9	12	12		
Marshall	10	72	64			10	72	56							
Mason															
Massac															
McDonough															
McHenry—Woodstock						9	78	32			3	78	15	3	15
McLean															
Menard															
Mercer						12	42	31	6	6					
Monroe															
Montgomery															
Morgan	51	108	108	51	108						13	108	103	13	103
Moultrie															
Ogle						19	18	18		6	10	18	8		8
Peoria															
Perry	8	16	15	8	15										
Piatt						6	15	9							
Pike	9	38	34	9	34						11	43	43	11	43
Pope															
Pulaski															
Putnam															
Randolph—Sparta	17	28	15								5	28	7		
Richland	3	36	5									36			
Rock Island. Port Byron	13	15	13	13	13										
Saline—Harrisburg							25				2	25	5		
Saline—Eldorado	4	27	10	4	10										
Sangamon															
Schuyler						24	39	39	24	39	1	37	5	1	5
Scott															
Shelby						17	28	28	17	28					
Stark—Wyoming						28	48	48			14	48	40		
Toulon						33	46	46	33	46	9	46	34	9	34
St. Clair						12	18	16	12	16	21	18	17	21	17
Stephenson															
Tazewell						33	35	32	33	32	34	35	28	34	28
Union															
Vermilion—Catlin						13	34	17	13	17					
Vermilion—Hoopeston						25	40	40	25	40					
Wabash															
Warren						17	33	30	17	30					
Washington															
Wayne															
White						15	28	28	4	8		28			
Whiteside—Sterling							39		4	1		39		6	14

Report of Pure-bred Stock—Continued.

Counties.	COTSWOLD SHEEP.					LEICESTER AND OTHER LONG WOOLS.					SOUTHDOWNS.				
				Owned in county					Owned in county					Owned in county	
	Number of entries.........	Amount premiums offered..	Amount premiums paid....	Number of entries...	Amount of premiums paid.....	Number of entries....	Amount premiums offered ..	Amount premiums paid....	Number of entries...	Amount of premiums paid.....	Number of entries.....	Amount premiums offered...	Amount premiums paid....	Number of entries...	Amount of premiums paid....
Whiteside—Morrison...	14	24	19	...	......	. ..	.... :	......	.....	... .	16	24	20	....	......
Will.....	....	......	...	...	.....	....	......	......	.....	......	....	......	......	..	......
Williamson ..	....	......	......	....	.... ..	6	12	6	...	6	...	... ..	... ..	....	......
Winnebago .	....	......	... ..	...	......	25	22	22	13	14	8	22	15	5	17
Woodford....	6	37	12	1	4	....	......	.....	.....	......	3	37	13	3	13
Total......	357	$1,151	$838	299	$661	751	$1,948	$1,372	529	$905	339	$1,375	$790	208	$540

Report of Pure-Bred Stock—Continued.

Counties.	Oxford Downs.					Shropshire Downs.					American Merino.					Spanish Merino and other Fine Wools.				
	Number of entries	Amount of premiums offered....	Amount of premiums paid........	Owned in county. Number of entries ..	Owned in county. Amount of premiums paid.	Number of entries	Amount of premiums offered	Amount of premiums paid	Owned in county. Number of entries	Owned in county. Amount of premiums paid.......	Number of entries	Amount of premiums offered....	Amount of premiums paid........	Owned in county. Number of entries .	Owned in county. Am unt of premiums paid	Number of entries	Amount of premiums offered.....	Amount of premiums paid.	Owned in county. Number of entries.	Owned in county. Amount of premiums paid.......
Adams											22	$50	$50	22	$50					
Alexander																				
Bond																				
Boone	4	$22	$10	4	$10											11	$23	$14	11	$14
Brown																1	44	2		
Bureau																				
Calhoun																				
Carroll																1	21	2	1	2
Cass																				
Champaign	39	34	34	39	34						8	34	24	8	24					
Christian																				
Clark																				
Clay											2	24	8	2	8					
Clinton																				
Coles											10	28	28							
Co k																				
Crawford																10	31	31		
Cumberland																				
DeKalb, Sycamore											1	30	4	1	4					
DeWitt																9	27	18	9	18
Douglas																				
DuPage																10	22	22		
Edgar																5	15	15	3	15
Edwards																17	22	21	9	10
Effingham																				
Fayette							$27		1											
Ford																				
Franklin																				
Fulton, Avon						4	22	$7								11	22	21		
Gallatin																				
Greene																2	28			

Report of Pure-bred Stock—Continued.

Counties.	OXFORD DOWNS. Number of entries	OXFORD DOWNS. Amount of premiums offered	OXFORD DOWNS. Amount of premiums paid	OXFORD DOWNS. Owned in county. Number of entries	OXFORD DOWNS. Owned in county. Amount of premiums paid	SHROPSHIRE DOWNS. Number of entries	SHROPSHIRE DOWNS. Amount of premiums offered	SHROPSHIRE DOWNS. Amount of premiums paid	SHROPSHIRE DOWNS. Owned in county. Number of entries	SHROPSHIRE DOWNS. Owned in county. Amount of premiums paid	AMERICAN MERINOS. Number of entries	AMERICAN MERINOS. Amount of premiums offered	AMERICAN MERINOS. Amount of premiums paid	AMERICAN MERINOS. Owned in county. Number of entries	AMERICAN MERINOS. Owned in county. Amount of premiums paid	SPANISH MERINO AND OTHER FINE WOOLS. Number of entries	SPANISH MERINO AND OTHER FINE WOOLS. Amount of premiums offered	SPANISH MERINO AND OTHER FINE WOOLS. Amount of premiums paid	SPANISH MERINO AND OTHER FINE WOOLS. Owned in county. Number of entries	SPANISH MERINO AND OTHER FINE WOOLS. Owned in county. Amount of premiums paid
Grundy																				
Hamilton																				
Hancock																				
Hardin																				
Henderson																				
Henry												$30				4	$30	$15	4	$15
Iroquois																				
Jackson, Murphysboro																6	17	11	6	11
Jackson, Carbondale		$40				14	$40	$30	14	$30	1	40	$5				40			
Jasper											6	36								
Jefferson																				
Jersey																				
JoDaviess																				
Johnson																				
Kane											7	40	14	7	$14	15	40	36	15	36
Kankakee											7	34	26							
Kendall						3	23	6	3	6							23			
Knox											27	95	60	27	60					
Lake, Libertyville																27	14	14	27	14
Lake, Waukegan		45				4	45	19	4	19		45				32	45	45	32	45
LaSalle						5	36	16												
Lawrence																				
Lee																				
Livingston,																3	48	15	1	15
Logan																				
Macon																				
Macoupin											7	56	40	7	40					
Madison																				
Marion																				
Marshall																16	72	72		
Mason																				
Massac																				

McDonough																				
McHenry, Woodstock																				
McLean																36	48	48	36	48
Menard																				
Mercer						4	39	16	4	16	13	36	32	13	32					
Monroe																				
Montgomery						11	17		11	17										
Morgan																10	30		10	30
Moultrie																				
Ogle						9	18	13		13		18								
Peoria																13	9	9		2
Perry																				
Piatt																5	13	11	5	13
Pike																1	6	6	1	6
Pope																6	39	34	6	34
Pulaski																				
Putnam																				
Randolph																				
Richland											6	36	12							
Rock Island																				
Saline, Harrisburg											8	25	14							
Sangamon																				
Schuyler																				
Scott																				
Shelby											17	28	28	17	28					
Stark, Wyoming																20	44	44	20	44
Stark, Toulon																14	48	40		
St. Clair																18	46	46	6	13
Stephenson																	18			
Tazewell																				
Union, Anna											3	7	7	3	7	15	35	35		
Vermilion, Catlin											6	34	11	6	11					
Wabash																				
Warren																				
Washington																11	33	31	11	31
Wayne																				
White	16	28	28	3	5		28					28								
Whiteside, Sterling																	28			
Whiteside, Morrison											6	21	24				39		5	15
Will																				
Williamson																				
Winnebago																				
Woodford											4	37	15			2	22	6	2	6
Total	59	$169	$72	46	$49	54	$295	$107	37	$101	161	$815	$392	113	$278	331	$1,072	$664	222	$437

Report of Pure-bred Stock—Continued.

Counties.	BERKSHIRE SWINE.					POLAND CHINA.					CHESTER WHITE.				
	Number of entries.	Amount premiums offered.........	Amount premiums paid.........	Owned in county: No. of entries	Owned in county: Amount premiums paid	Number of entries.	Amount premiums offered.........	Amount premiums paid	Owned in county: No. of entries	Owned in county: Amount premiums paid	Number of entries.	Amount premiums offered.........	Amount premiums paid.........	Owned in county: No. of entries	Owned in county: Amount premiums paid
Adams	14	$87	$77			33	$87	$87	10	$8					
Alexander															
Bond															
Boone	3	37	5	3	$5	28	37	27	14	7	13	$37	$16	13	$16
Brown	19	80	71			41	80	80	22	13					
Bureau						43	59	59	43	59	10	59	39	10	39
Calhoun															
Carroll						8	40	25	8	25	8	40	25	8	25
Cass	5	40	27	5	27						11	57	53	1	8
Champaign	51	52	35	39	35	90	52	48	90	48	4	25	13	4	13
Christian															
Clark	11	36	6			11	36	2	4	1					
Clay	7	30				1	30	5	1	5	5	30	8	5	8
Clinton															
Coles	18	87	72			25	87	87	25	87					
Cook															
Crawford															
Cumberland															
DeKalb—Sycamore	13	39	27	16	27	12	39	37							
DeKalb—Sandwich						27		24	27	24					
DeWitt	4	48	18	4	18										
Douglas		36	6		6		36								
DuPage						1	60	5							
Edgar	30	101	96	24	66	26	71	71	22	51					
Edwards	12	49	33	12	33	18	49	42	18	42					
Effingham	7	38	19	7	19	5	41	12	5	12					
Fayette		25		15	12		25		6	5					
Ford															
Franklin	3	15	3	3	3	12	15	15	12	15					
Fulton—Avon						54	69	69			11	69	48		
Gallatin	4	65	17	3	17							65			
Greene											26	60	55	26	5 5
Grundy															
Hamilton	13	19	16	6	5	1	19	2	1	2		19			
Hancock—Warsaw	2	16	5	2	5	3	16	7	3	7					
Hardin															
Henderson	5	42	14	5	14	10	42	22	10	22					
Henry															
Iroquois		40	40				40	40							
Jackson—Murphysb'o	4	19	2	4	2						5	19	6	5	6
Jackson—Carbondale	9	48	26	4	13	10	48	23	10	23	3	48	10	3	10
Jasper	5	68	20	5	20	6	63	20	6	20					
Jefferson	20	36	36	12	12	9	36	21	9	21					
Jersey															
JoDaviess—Galena						10	128	20	10	20					
JoDaviess—Warren						4	17	11	4	11	3	17	9		
Johnson															
Kane	15	40	36	15	36	16	40	28	12	12		40			
Kankakee						24	68	66	24	66					
Kendall	9	27	18	9	18	22	27	25	22	25		27			
Knox	14	40	40	14	40	40	60	60	40	60	22	40	20	22	20
Lake—Libertyville	12	23	17	12	17	6	23	6	6	6	6	23	11	6	11
Lake—Waukegan	4	45	13	4	13	11	45	27	11	27	4	45	19	4	19
LaSalle	2	66	12	2	12	19	66	50	17	42	9	42	42	6	25
Lawrence															
Lee															

Report of Pure-bred Stock—Continued.

Counties.	BERKSHIRE SWINE.					POLAND CHINA.					CHESTER WHITE.				
	Number of entries	Amount premiums offered......	Amount premiums paid........	Owned in county		Number of entries.	Amount premiums offered.........	Amount premiums paid...........	Owned in county		Number of entries.	Amount premiums offered	Amount premiums paid..........	Owned in county	
				No. of entries	Amount premiums paid.				No. of entries	Amount premiums paid.				No. of entries.	Amount premiums paid.
Livingston—Fairbury..	8	10	26	2	....	31	18	48	14	12	5	40	25	5	25
Logan—Lincoln....	22	57	53	20	48	25	57	57	12	20	...	......	....	...	......
Logan—Atlanta.....	3	12	13	...	.....	15	42	29	...	....	5	42	17	...	......
Macon.	...	...	...	...	.....	...	...	....	...	...	...	....	......	...	......
Macoupin . .	11	58	48	11	48	21	58	58	19	53	...	......	.....	...	.....
Madison......	....	...	... ..	...	.....	...	...	.....	...	......	...	......	.....	..	......
Marion.......	...	...	....,	...	....	...	...	...	...	......	...	......	.....	...	...
Marshall......	6	66	45	..	.....	84	66	66	....	.....	10	50	50	...	......
Mason	....	....	....	....	.. .	..	...	.. .	..	..	...	...	.	...	......
Massac	...	......	......	. .	.....	...	...	...	...	.. ..	..	....	.	...	....
McDonough.	...	....	. ....	....	.	..	..	...	...	....	...	.....	......	. ..	......
McHenry—Woodstock.	3	56	8	3	8	22	56	31	22	31	3	56	11	3	11
McLean	.....	..	....	...	...	..	....	....	. .	..	..	. .	....	....	....
Menard	...	.....	...	...	...	..	...	..	...	......	...	..	....	....	......
Mercer.	8	66	49	8	49	28	66	59	24	51	..	35	. .	....	......
Monroe	..	....	...	...	...	..	...	....	...	....	...	......	..	...	.....
Montgomery.	10	18	15	10	15	..	.....	...	...	......	4	18	17	4	17
Morgan.......	36	99	99	12	18	30	99	95	12	7	11	99	80	11	80
Moultrie ...	...	...	...	... .	...	...	..	..	. .	... ..	. .	...	... ..	....	......
Ogle.	5	12	2	....	2	..	12	. .	....	......	...	12	.....	....	......
Peoria.......	...	......	......	...	.....	...	.....	.	...	......	...	...	......	....	......
Perry........	6	25	14	6	14	6	25	8	6	8	...	....	......	...	......
Platt.	9	30	27	9	27	9	30	27	...	.	...	..	.....	.	......
Pike.........	...	. .	......	...	...	15	72	67	15	67	9	72	51	9	51
Pope...	...	......	......	.	....	...	......	......	...	......	...	.....	.. ..	. ..	......
Pulaski......	...	......	......	...	......	...	.....	......	...	......	..	......	......	..	.....
Putnam.......	...	......	......	...	.....	...	.....	.....	.	......	..	...	.....	....	......
Randolph. ..	...	......	......	...	......	...	......	......	...	. ..	.	......	... .	....	......
Richland.. ..	3	120	8	....	..	11	120	27	3	6	14	120	40	7	19
Rock Island—Port Byron.	....	29	......	...	......	16	29	26	16	26	....	29	......	....	.... .
Rock Island—Hillsdale ..	....	......	......	...	......	11	......	18	11	18	2	......	4	2	4
Saline—Harrisburg.	4	34	15	4	15	1	34	5	1	5	...	34	......	....	......
Saline—Eldorado ...	15	28	28	15	28	4	28	14	4	14	2	28	8	2	8
Sangamon	...	......	......	...	......	...	......	.... .	...	......	...	.. .	.....	....	......
Schuyler. ...	8	78	29	8	29	13	66	48	3	11	...	......	......	....	......
Scott	....	......	......	..	......	...	......	.....	. .	......	...	......	.....	...	......
Shelby........	14	15	38	14	38	16	44	44	16	44	...	....	......	....	......
Stark—Wyoming..	8	60	36	..	......	24	60	60	....	......	8	60	30	....	......
Stark—Toulon. ...	9	36	26	9	26	28	36	36	28	36	6	36	29	6	29
St. Clair	4	26	......	....	......	10	26	22	10	22	7	26	12	7	12
Stephenson .	...	. .	. ....	....	......	..	......	......	....	......	.	......	....	....	......
Tazewell	11	61	22	....	.....	58	61	70	40	53	17	61	50	...	......
Union—Anna. . .	3	15	12	3	12	2	15	10	2	10	1	15	5	1	5
Vermilion—Catlin	18	46	23	18	23	....	......	......	....	......	...	.....	......	....	......
Vermilion—Hoopeston .	29	74	74	9	14	27	74	74	10	9	9	17	17	9	17
Wabash.......	....	......	.. ...	...	......	...	......	......	...	......	...	......	......	....	......
Warren	18	112	112	18	112	23	112	112	23	112	..	......	.....	....	......
Washington.	....	......	......	....	......	...	......	......	...	......	...	......	......	....	......
Wayne.......	...	......	......	...	......	...	......	......	...	......	...	......	......	....	......
White.	18	33	33	4	10	16	33	33	7	15	2	33	13	2	13
Whiteside—Sterling.. .	....	54	.....	9	30	....	......	.. ...	....	......	....	54	....	27	

Report of Pure-bred Stock—Continued.

Counties.	BERKSHIRE SWINE.					POLAND CHINA.					CHESTER WHITE.				
	Number of entries.	Amount premiums offered....	Amount premiums paid............	Owned in county		Number of entries	Amount premiums offered.........	Amount premiums paid.............	Owned in county		Number of entries.	Amount premiums offered..........	Amount premiums paid	Owned in county	
				No. of entries	Amount premiums paid.				No. of entries	Amount premiums paid.				No. of entries	Amount premiums paid.
Whiteside—Morrison...	5	$29	$18	...	......	17	$28	$29	....	......	6	$29	$23	....	......
Whiteside—Albany......	....	11	......	....	....	2	11	8	2	$8	....	11	......	....	....
Will..........	...	......	......	...	......	...	......	......	....	......	....	......	......	....	......
Williamson...	9	45	28	9	$28	....	......	......	....	......	....	......	......	....	......
Winnebago...	6	36	17	....	......	12	36	24	12	24	5	36	13	....	......
Woodford	7	50	29	...	......	36	50	48	17	11	....	50	......	....	......
Total......	636	$2,996	$1,754	426	$1,069	1239	$3,145	$2,376	821	$1,439	266	$1,825	$869	208	$600

Report of Pure-bred Stock—Continued.

Counties.	Essex.					Suffolk.					Short-faced Y'rkshire				
	No. of entries	Amount premiums offered	Amount premiums paid	Owned in county		No. of entries	Amount premiums offered	Amount premiums paid	Owned in county		No. of entries	Amount premiums offered	Amount premiums paid	Owned in county	
				No. of entries	Am't pr'mium paid				No. of entries	Am't pr'mium paid				No. of entries	Am't pr'mium paid
Adams															
Alexander															
Bond															
Boone															
Brown															
Bureau	14	$59	$49				$26								
Calhoun															
Carroll	5	40	20	5	$20										
Cass															
Champaign															
Christian															
Clark															
Clay															
Clinton															
Coles															
Cook															
Crawford															
Cumberland															
DeKalb															
DeWitt															
Douglas															
DuPage															
Edgar															
Edwards															
Effingham	4	39	19	4	19										
Fayette															
Ford															
Franklin															
Fulton															
Gallatin															
Greene						4	60	$5	4	$5					
Grundy															
Hamilton															
Hancock															
Hardin															
Henderson															
Henry															
Iroquois															
Jackson—Carbondale		48					48					$48			
Jasper															
Jefferson															
Jersey															
JoDaviess															
Johnson															
Kane	4	40	8	4	8	7	40	20	6	16					
Kankakee															
Kendall		27													
Knox															
Lake—Waukegan		45				6	45	26	6	26		45			
LaSalle															
Lawrence															
Lee															
Livingston															
Logan															
Macon															
Macoupin															
Madison															
Marion															
Marshall	8	52	52												
Mason															
Massac															
McDonough															
McHenry—Woodstock	4	56	14	4	14										
McLean															

Report of Pure-bred Stock—Continued.

Counties.	ESSEX.					SUFFOLK.					SHORT-FACED Y'RKSHIRE				
	No. of entries.....	Amount premiums offered	Amount premiums paid	Owned in county		No. of entries.....	Amount premiums offered	Amount premiums paid	Owned in county		No. of entries.....	Amount premiums offered	Amount premiums paid	Owned in county	
				No. of entries	Am't pr'mium paid				No. of entries	Am't pr'mium paid				No. of entries	Am't pr'mium paid ....
Menard															
Mercer															
Monroe															
Montgomery															
Morgan	11	$99	$77	11	$77										
Moultrie															
Ogle															
Peoria															
Perry															
Piatt															
Pike															
Pope															
Pulaski															
Putnam															
Randolph															
Richland															
Rock Island—Port Byron	3	29	5	3	5										
Saline—Eldorado	1	28	4	1	4										
Sangamon															
Schuyler															
Scott															
Shelby															
Stark—Toulon	6	36	28	6	28										
St. Clair						2	$26				14	$26	$24	11	$24
Stephenson															
Tazewell															
Union—Anna						3	15	$12	3	$12					
Vermilion—Catlin						7	46	13	7	13					
Wabash															
Warren															
Washington															
Wayne															
White		33					33					33			
Whiteside—Morrison	8	29	29												
Will															
Williamson															
Winnebago															
Woodford		50				1	50	3	1	3					
Total	68	$710	$305	38	$175	30	$389	$79	27	$75	14	$152	$24	14	$24

AGRICULTURAL STATISTICS FOR 1882 AND 1883.

AS RETURNED BY ASSESSORS MAY, 1882 AND 1883.

Counties.	Corn.		Winter Wheat.		Spring Wheat.	
	Acres.	Bushels produced.	Acres.	Bushels produced.	Acres.	Bushels produced.
Adams	85,239	2,540,354	85,125	571,066	178	276
Alexander	....	106,187	....	12,820	....	....
Bond	....	7,035	....	371,217	....	6,174
Boone	32 591	1,057,461	1,456	9,094	1,134	8,177
Brown	30,610	1,022,559	24,454	156,767	....	....
Bureau	175,577	4,213,362	1,553	14,177	6,267	25,588
Calhoun	13,964	260,775	22,118	183,964	....	....
Carroll	67,168	2,253,440	3,149	174,494	2,015	8,149
Cass	28,984	1,764,464	12,934	65,094	452	4,145
Champaign	200,000	4,843,716	30,000	381,515	300	1,636
Christian	145,634	4,182,025	49,282	329,761	401	1,692
Clark	37,497	248,337	52,123	368,194	....	....
Clay	29,171	12,540	40,026	103,337	4	....
Clinton	45,140	68,404	88,066	639,559	....	150
Coles	65,128	1,089,564	25,946	127,656	163	522
Cook	....	1,678,318	....	1,923	....	9,775
Crawford	30,553	95,405	50,092	293,655	....	....
Cumberland	....	187,223	....	94,644	....	335
DeKalb	99,764	3,238,641	375	2,969	809	3,298
DeWitt	82,060	2,686,632	8,561	78,251	1,591	5,048
Douglas	75,250	1,616,197	22,500	101,979	441	225
DuPage	21,237	902,979	274	5,539	574	8,554
Edgar	70,322	1,576,818	47,029	521,435	140	7,053
Edwards	17,775	31 198	28,689	97,888	14	128
Effingham	40,125	88,233	50,396	215,533	41	62
Fayette	6,669	63,311	11,064	282,270	....	....
Ford	125,834	3,225,015	509	4,494	101	89
Franklin	19,847	....	26,955	....	25	....
Fulton	80,707	3,384,015	26,644	231,070	3,300	11,814
Gallatin	28,803	1,435,870	31,623	366,322	17	....
Greene	41,175	1,770,165	44,082	592,827	111	2,610
Grundy	68,111	1,864,775	347	729	23	1,275
Hamilton	21,489	35,448	35,118	117,915	....	315
Hancock	102,990	3,144,699	31,672	228,509	2,981	22,617
Hardin	6,193	125,504	4,801	22,986	7	....
Henderson	52,172	2,146,907	3,371	23,809	3,172	6,197
Henry	....	3,889,530	....	4,697	....	5,018
Iroquois	229,653	5,383,309	9,823	74,877	308	1,236
Jackson	23,635	80,188	48,983	394,010	85	700
Jasper	34,754	52,047	44,146	147,192	....	....
Jefferson	....	65,310	....	285,096	....	138
Jersey	....	630,499	....	664,831	....	....
Jo Daviess	50,375	1,725 809	3,887	21,867	1,475	4,899
Johnson	16,560	127,573	22,164	146,782	....	192
Kane	53,771	1,624,697	157	3,135	569	2,948
Kankakee	109,732	2,784,061	2,653	37,069	360	2,553
Kendall	73,629	1,575,548	137	1,365	820	1,398
Knox	135,050	3,686,695	8,269	41,531	1,130	3,349
Lake	26,439	1,104,509	277	3,225	1,700	13,043
LaSalle	237,583	5,344,837	1,777	21,576	2,781	108,775
Lawrence	28,887	108,172	55,023	190,284	....	....
Lee	140,146	....	2,101	....	3,714	....
Livingston	268,597	5,976,835	838	8,917	121	5,330
Logan	140,859	4,984,951	26,199	276,671	779	5,678
Macon	....	584,853	....	336,987	....	995
Macoupin	90,982	1,980,939	112,271	893,765	182	719
Madison	72,500	490,510	152,900	1,784,566	....	....

Agricultural Statistics, 1882—Continued.

Counties.	CORN.		WINTER WHEAT.		SPRING WHEAT.	
	Acres.	Bushels produced	Acres.	Bushels produced	Acres.	Bushels produced.
Marion	31,606	190,375	51,903	220,300	....	....
Marshall	58,761	1,735,040	936	7,928	147	1,335
Mason	....	....	....	....	....	....
Massac	12,911	104,921	17,123	128,861	....	....
McDonough	100,000	1,713,487	20,000	55,464	9,000	6,272
McHenry	38,830	1,895,910	462	4,588	3,495	31,060
McLean	250,000	8,682,611	5,000	105,169	600	7,331
Menard	77,049	2,311,470	18,001	170,644	1,064	7,560
Mercer	97,397	2,407,810	2,840	18,863	4,172	9,419
Monroo	16,118	132,346	60,048	716,172	....	....
Montgomery	107,353	1,021,855	89,218	380,356	64	290
Morgan	101,297	4,251,880	40,000	520,000	2,178	6,400
Moultrie	61,540	1,312,559	1,052	33,001	78	....
Ogle	107,404	3,537,258	2,831	29,330	1,919	10,892
Peoria	93,271	2,412,631	7,450	42,860	1,600	1,880
Perry	14,196	....	44,400	....	....	....
Piatt	66,916	2,303,806	10,217	116,628	476	5,120
Pike	79,442	1,374,458	77,446	373,989	141	645
Pope	22,001	146,003	16,229	112,593	....	150
Pulaski	11,600	....	11,397	....	....	....
Putnam	28,872	616,660	1,077	10,032	1,403	564
Randolph	23,646	136,654	84,993	803,668	....	2,148
Richland	24,338	12 955	40,572	126,306	....	....
Rock Island	52,242	132,232	277	2,521	2,178	7,178
Saline	22,722	134,359	28,203	104,899	....	....
Sangamon	112,877	5,646,855	39,930	597,285	769	2,582
Schuyler	36,074	1,141,619	29,632	205,031	326	3,186
Scott	30,184	1,067,100	24,530	163,148	89	320
Shelby	100,000	1,408,875	50,000	106,691	1,342	....
Stark	68,240	1,492,875	444	3,613	255	649
St. Clair	54,945	570,630	158,643	1,297,971	184	....
Stephenson	74,231	2,614,532	6,233	58,249	5,035	34,326
Tazewell	106,767	3,846,934	26,565	285,911	1,020	4,660
Union	20,000	204,126	26,181	252,240	50	679
Vermilion	126,756	2,670,891	44,317	509,012	623	148
Wabash	16,876	90,225	27,461	128,133	....	....
Warren	123,872	336,689	2,847	14,846	2,670	4,822
Washington	35,000	4,680	72,500	651,798	....	....
Wayne	34,208	6,390	52,167	143,964	....	....
White	38,487	224,002	56,167	239,842	437	....
Whiteside	95,402	2,673,133	681	4,352	1,718	12,056
Will	113,459	2,952,122	1,278	17,478	636	5,188
Williamson	39,827	130,464	47,964	185,108	....	10
Winnebago	65,606	2,349,017	1,680	11,158	591	11,259
Woodford	112,947	3,507,415	5,670	44,904	951	3,457
Total	6,586,201	164,973,728	2,658,534	21,137,114	83,496	474,441

Agricultural Statistics, 1881—Continued.

Counties.	Oats.		Rye.		Barley	
	Acres.	Bushels produced	Acres.	Bushels produced.	Acres.	Bushels produced.
Adams	25,112	749,030	891	10,852	4	
Alexander		3,609		703		
Bond		252,274				
Boone	25,380	758,715	1,185	18,567	628	5,821
Brown	5,001	131,934	451	2,207		
Bureau	38,618	1,317,140	3,627	58,687	894	5,763
Calhoun	1,119	20,587		220		
Carroll	33,287	998,848	5,081	64,464	2,774	60,865
Cass	5,019	254,723	242	5,488	76	1,426
Champaign	45,000	1,146,385	2,800	4,404	50	63
Christian	14,976	152,527	185	3,352	225	1,434
Clark	4,498	53,215	83	69		
Clay	8,255	122,302	191	565	49	
Clinton	16,056	294,120	96	326	33	15
Coles	8,319	171,508	231	831	97	255
Cook		1,655,097		9,322		3,117
Crawford	8,761	17,524	50	1,328	6	12
Cumberland		83,664		378		
DeKalb	44,890	1,835,290	835	15,641	643	8,999
DeWitt	16,172	656,081	3,033	50,689	27	60
Douglas	12,000	280,252	313	5,210	57	200
DuPage	20,644	1,043 760	822	29,671	20	2,500
Edgar	5,315	139,834	91	1,256	11	100
Edwards	1,582	39,383				
Effingham	15,268	333,791	210	1,836		93
Fayette	2,421	220,662	19	2 274		
Ford	19,515	601,256	295	12,013		30
Franklin	4,080		16		10	
Fulton	14,494	263,622	19,813	148,618	73	1,022
Gallatin	1,154	212 172				
Greene	2,339	54,005	5	415		
Grundy	12,513	444,867	768	9,096		
Hamilton	2,092	25,122		9		
Hancock	35,968	1,055,255	5,546	58,802	47	1,041
Hardin	1,071	7,519	11	190		
Henderson	12,569	484,947	4,223	52,592	30	598
Henry		1,200,452		93,161		2,447
Iroquois	46,459	1,255,827	2,950	51,033	40	35
Jackson	2,462	31,136	44	269	142	2,434
Jasper	5,758	72,298	146	809	3	6
Jefferson		79,963		142		495
Jersey		79,837		1,099		30
JoDaviess	32,184	910,362	1,566	11,812	514	9,379
Johnson	1,764	10,839	12	15		
Kane	25,645	881,863	1,562	25,601	156	2,198
Kankakee	35,772	815,236	3,298	40,476	20	300
Kendall	22,721	1,360,215	398	5,599	55	
Knox	43,610	1,215,373	8,579	102,853	59	100
Lake	28,659	943,103	228	3,656	206	4,740
LaSalle	61,178	1,816,267	2,371	26,206	486	5,182
Lawrence	2,728	4,718	76	690	103	4,400
Lee	58,111		3,992		2,016	
Livingston	62,667	2,055,686	4,665	73,563	4	
Logan	20,200	734,225	2,690	47,593	717	20,001
Macon		946,194		16,794		955
Macoupin	11,112	309,708	346	1,036	40	1,090
Madison	14,150	960,460	1,450	5,600		
Marion	8,725	217,500	110	869	6	
Marshall	18,087	636,356	1,889	32,934	15	
Mason						
Massac	1,382	10,956	14	185		4
McDonough	25,000	369,158	6,000	58,648		
McHenry	22,422	1,150,152	347	7,804	527	7,395
McLean	80,000	2,437,145	7,000	186,396	100	1,200
Menard	10,220	332,600	1,639	32,694	198	3,832
Mercer	29,381	744,705	6,697	69,064	28	108
Monroe	6,003	56,705	51	787	173	3,384
Montgomery	18,728	479,319	266	1,684	2	13
Morgan	10,160	435,000	5,000	70,000	223	3,500
Moultrie	8,326	219,899	225	1,215	24	400
Ogle	59,475	1,846,668	3,162	49,587	5,654	96,555
Peoria	25,380	850,694	9,500	82,834		2,267
Perry	9,316		10			
Piatt	16,132	461,175	764	17,175		1,054

Agricultural Statistics, 1881—Continued.

Counties.	OATS.		RYE.		BARLEY.	
	Acres.	Bushels produced	Acres.	Bushels produced	Acres.	Bushels produced.
Pike	6,855	226,737	191	4,080	20	....
Pope	5,000	34,372	....	48	....	....
Pulaski	600	....	....	....	....	....
Putnam	6,430	196,139	1,308	20,406	10	....
Randolph	11,158	172,960	85	293	130	2,282
Richland	6,108	90,288	115	450	10	....
Rock Island	14,789	422,730	4,716	52,538	221	2,163
Saline	1,812	16,190	....	60	....	....
Sangamon	10,023	496,327	1,946	41,804	510	6,712
Schuyler	5,086	174,543	468	4,407	....	19
Scott	1,278	50,070	60	1,988	....	....
Shelby	12,000	425,701	400	3,172	....	776
Stark	20,713	541,022	1,610	21,862	....	265
St. Clair	12,610	241,723	109	1,001	876	24,411
Stephenson	41,675	1,406,046	10,862	174,022	10,276	200,685
Tazewell	29,175	1,091,201	4,195	55,707	41	310
Union	4,000	30,850	40	10,190	4	423
Vermilion	15,444	402,150	633	7,103	16	317
Wabash	1,425	22,723	6	265	....	....
Warren	36,731	974,550	6,591	71,739	....	300
Washington	25,000	335,000	56	850	....	....
Wayne	5,825	73,371	30	85	....	....
White	2,404	22,363	44	8	1	340
Whiteside	31,028	985,378	7,378	111,005	1,256	22,280
Will	69,295	1,803,255	1,736	42,587	37	704
Williamson	4,327	15,077	....	....	....	....
Winnebago	45,420	1,331,987	6,273	92,149	481	10,283
Woodford	46,100	1,421,808	5,218	58,971	5	120
Total	1,759,778	55,583,493	173,320	2,466,958	31,249	539,308

Agricultural Statistics, 1881—Continued.

Counties.	TIMOTHY MEAD'W		CLOVER MEADOW		PRAIRIE.		HUNGARIAN AND MILLET.	
	Acres.	Tons produced.	Acres.	Tons produced.	Acres.	Tons produced.	Acres.	Tons produced.
Adams	21,730	17,600	3,520	2,323		8	30	130
Alexander		307		144				12
Bond		9,639						
Boone	15,074	21,591	5,063	6,683	7,813	9,721	121	79
Brown	7,366	8,175	2,597	2,128		99		61
Bureau	29,264	45,749	1,265	874	11,026	19,325	279	338
Calhoun	1,700	773	1,550	1,258		149		27
Carroll	20,822	60,060	6,746	11,890	2,583	2,892	168	312
Cass	1,060	3,537	30	53	12	458		241
Champaign	40,000	34,676	500	395	4,000	1,059	300	444
Christian	27,960	31,993	609	360	1,114	52	231	81
Clark	15,539	14,641	2,327	818		3	23	24
Clay	17,458	10,640	215	44	916	1,033	143	36
Clinton	9,694	21,327	637	164	325	627	70	71
Coles	18,084	29,766	1,234	1,190	105	75	880	640
Cook		38,664		461		76,965		2,266
Crawford	11,520	8,708	506	326		98	20	
Cumberland		11,065		156				3
DeKalb	36,289	62,387	4,726	6,535	22,369	26,171	293	463
DeWitt	14,349	14,982	689	288	361	523	96	80
Douglas	21,825	19,785	297	874	700	421	925	1,241
DuPage	12,141	28,498	636	1,584	11,151	18,902	254	668
Edgar	23,169	25,138	1,028	957	216	195	139	239
Edwards	3,419	1,393	229	1,180		4,575		
Effingham	18,697	14,922	128	63	897	779	85	1
Fayette	2,565	10,862	167	8		40	47	12
Ford	20,835	15,737	207	296	2,662	1,539	262	208
Franklin	2,714		419		604		7	
Fulton	13,693	24,727	10,744	11,595	198	94	12	31
Gallatin	1,757	10,414	2,698	13,320			115	
Greene	11,226	12,549	1,371	1,959	19	53	167	138
Grundy	12,170	18,286	153	794	9,673	13,232	300	186
Hamilton	6,380	5,215	1,287	247				
Hancock	35,377	28,140	1,479	1,621	229	138	40	158
Hardin	1,135	672	1,107	205			22	37
Henderson	8,148	8,450	526	212	690	2[illegible]	57	3
Henry		35,443		1,185		19,711		513
Iroquois	49,221	42,670	729	778	8,855	7,088	1,504	2,008
Jackson	3,392	2,803	6,268	1,411	7		104	32
Jasper	20,046	11,586	365	623	206	205	66	33
Jefferson		4,935		79		333		46
Jersey		7,636		1,652		83		70
JoDaviess	27,663	28,998	7,344	3,949	2,270	2,870	31	216
Johnson	1,265	1,271	4,343	2,094			14	110
Kane	36,170	54,346	1,511	2,833	16,436	18,428	382	571
Kankakee	36,941	40,204	1,514	1,173	15,951	23,520	1,039	268
Kendall	19,880	24,500	1,283	2,961	8,000	10,311	131	174
Knox	41,326	40,617	3,109	2,779	488	205	124	256
Lake	20,561	21,692	6,075	10,987	19,372	24,024	476	623
LaSalle	48,344	60,857	1,650	2,281	25,522	29,117	565	1.085
Lawrence	8,334	7,123	1,791	1,133	85	80	116	17
Lee	32,140		11,679		17,720		890	
Livingston	45,199	44,963	1,181	909	13.987	13,560	1,162	2,623
Logan	17,547	15,087	267	153	380	621	40	190
Macon		20,792		586		293		249
Macoupin	24,966	24,049	1,679	1,414	20		218	186
Madison	14,500	22,012	3,150	18,012	3,300		2,950	7,650
Marion	13,642	9,979	143	76	88	337	153	313
Marshall	9,612	14,550	2,334	1,552	850	1,108	69	3,466
Mason								
Massac	1,770	1,312	2,324	497	3		20	30
McDonough	20,000	9,503	1,000	1,414		16		
McHenry	19,368	43,150	5,719	12,394	15,[illegible]39	28,351	524	2,026
McLean	45,000	54,577	12,000	3,943	1,500	1,423	130	134
Menard	20,162	30,195	2,202	4,439	1,449	2,876	159	342
Mercer	24,955	27,991	948	712	3,120	1,762	111	601
Monroe	2,686	3,255	6,799	5,590			164	26
Montgomery	27,838	18,785	791	376	137	8	288	145
Morgan	34,589	30,986	1,500	1,600	90	75	65	110
Moultrie	9.299	9,140	271	87	172	212	265	145
Ogle	24,199	46,300	13,298	15,123	5,393	6,997	251	417
Peoria	24,580	22,666	2,364	7,364	480	495	25	67

Agricultural Statistics, 1881—Continued.

Counties.	TIMOTHY MEAD'W		CLOVER MEADOW		PRAIRIE.		HUNGARIAN AND MILLET.	
	Acres.	Tons produced.	Acres.	Tons produced.	Acres.	Tons produced.	Acres.	Tons produced.
Perry	4,742	2,443	1,955	82	....	....	11	....
Piatt.	8,316	12,895	386	1,013	331	409	68	318
Pike	11,907	10,288	3,565	1,855	21	88	72	453
Pope	2,488	1,646	1,644	764	....	117	68	262
Pulaski	1,792	....	1,000	....	....	... .	....	....
Putnam	5,491	8,081	330	573	477	407	16	....
Randolph	5,149	4,649	5,269	3,318	11	4	360	115
Richland	13,244	10,234	1,275	401	6	19	39	....
Rock Island....	13,341	18,651	935	1,389	6,069	15,150	69	178
Saline	3,621	2,671	1,729	733	... .	....	....	12
Sangamon	17,050	30,419	732	500	154	73	40	129
Schuyler ...	9,098	11,138	5,192	4,837	30	58	5	37
Scott	4,039	5,052	25	244	78	10	....	42
Shelby	30,000	30,475	100	505	77	25	500	934
Stark	11,309	11,807	629	287	1,043	769	59	133
St. Clair	9,394	9,621	7,534	5,401	30	5	100	118
Stephenson ...	15,471	25,734	10,582	14,455	6,453	7,458	242	352
Tazewell	18,605	26,440	2,875	3,514	868	1,278	27	91
Union	2,850	1,926	5,100	3,264	... .	32	20	49
Vermilion	36,601	35,587	859	1,184	1,012	152	1,079	686
Wabash	4,202	3,257	2,752	1,999	997	878	... .	... .
Warren	23,611	20,327	693	658	175	284	17	101
Washington ..	4,374	3,253	193	46	53	72	86	70
Wayne	11,960	10,050	2,174	402	2,680	2,035	5,493	3
White	5,391	3,365	5,589	2,385	19	... .	12	....
Whiteside.. ..	21,330	38,945	2,189	2,898	10,844	18,424	357	696
Will	38,431	51,392	4,253	5,398	33,762	36,979	1,091	771
Williamson	3,128	2,834	6,122	2,646	....	11	... .	15
Winnebago	17,092	24,107	7,863	10,864	6,388	9,155	341	411
Woodford.....	24,361	21,609	4,165	4,355	2,534	2,280	20	99
Total	1,586,863	1,944,237	248,003	262,464	313,797	469,743	27,317	39,077

Agricultural Statistics, 1881—Continued.

Counties.	BUCKWHEAT.		CASTOR BEANS.		BEANS.		PEAS.	
	Acres.	Bushels produced.	Acres.	Bushels produced.	Acres.	Bushels produced.	Acres.	Bushels produced.
Adams	22	50			7	200	9	223
Alexander						150		295
Bond								
Boone	375	841			16	59		60
Brown						2		
Bureau	14	35	1		1	36	1	100
Calhoun								
Carroll	136	155				5	3	30
Cass						13		
Champaign	75	172			25		10	
Christian	1				1			
Clark	85	15			62	16	18	4
Clay	37		4	27	64	12		
Clinton			32	40	6			
Coles	33	20			42		1	
Cook		561		25		542		1,932
Crawford	100	374		22	25	27		
Cumberland		63				8		
DeKalb	85	551			5	60	1	131
DeWitt	9		1		2			
Douglas	25	3			10		1	50
DuPage		39				45	4	433
Edgar	12				11	10	1	
Edwards								
Effingham	8	125			13	13	4	20
Fayette		35			9	11		
Ford		40			164	8	3	
Franklin	17		522		11		10	
Fulton	50	240				56		20
Gallatin	1							
Greene					7		3	
Grundy	17					6		50
Hamilton					25			
Hancock	34	80	1	5	3		14	515
Hardin	4							
Henderson	12	37						
Henry		120						
Iroquois	177	780			32	26	4	20
Jackson	15			2	1	8	3	120
Jasper	48	311			25	13		
Jefferson				22		32		
Jersey						40		45
JoDaviess	160	169			20	47	1	362
Johnson								20
Kane	80	531			4		1	60
Kankakee	66	352			11	3	1	
Kendall	15	226					5	25
Knox	22	4			12	18	1	
Lake	92	415	1		7	120	4	
LaSalle	21	79		20	13	177	3	147
Lawrence	105	426			5	10		
Lee	121				5			
Livingston	20	124			43	27		
Logan								
Macon								75
Macoupin	17	40						50
Madison	5			3,000				
Marion	40	283	99	91	7	8	13	7
Marshall	4						1	
Mason								
Massac	2	6					15	
McDonough		68		6				2,442
McHenry	299	3,788			15	228	2	
McLean		55			20	69	10	41
Menard	17	859						
Mercer	73	173				4	4	
Monroe								
Montgomery		8			1			
Morgan	10	125		500	40		35	700
Moultrie	26		1		6			
Ogle	184	836			33	20	1	
Peoria	60	27			29	17	3	
Perry	1							

Agricultural Statistics, 1881—Continued.

Counties.	BUCKWHEAT.		CASTOR BEANS.		BEANS.		PEAS.	
	Acres.	Bushels produced.	Acres.	Bushels produced.	Acres.	Bushels produced.	Acres.	Bushels produced.
Piatt	21	30	1	68	5	20	1	5
Pike	4	....	....	....	1	2	....	....
Pope	....	....	....	....	....	....	....	....
Pulaski	....	....	....	....	100	....	150	....
Putnam	8	10	....	....	....	29	....	....
Randolph	2	....	8	....	....	2	1	26
Richland	39	61	....	109	6	70	2	....
Rock Island	33	470	....	....	5	107	30	....
Saline	....	....	....	....	....	....	....	....
Sangamon	....	60	....	....	1	30	8	190
Schuyler	15	....	....	....	4	10	....	10
Scott	....	187	....	....	....	....	....	....
Sholby	....	220	....	6	....	....	....	....
Stark	10	....	....	....	....	....	....	3
St. Clair	15	....	....	....	1	295	3	225
Stephenson	118	305	....	....	6	20	3	....
Tazewell	8	25	....	....	3	....	....	....
Union	10	18	....	....	....	6	....	12
Vermilion	5	202	....	....	3	....	4	....
Wabash	5	63	....	....	5	14	....	....
Warren	26	213	2	....	1	....	....	....
Washington	1	50	14	13	8	3	4	150
Wayne	27	336	61	24	36	58	....	172
White	1	....	....	....	....	....	....	....
Whiteside	37	616	....	....	....	89	....	....
Will	15	23	7	....	6	198	2	132
Williamson	115	....	....	25	....	....	....	3
Winnebago	83	139	3	....	10	122	1	1,277
Woodford	18	75	....	....	4	51	19	500
Totals	3,648	16,374	758	4,005	1,012	3,267	419	10,713

Agricultural Statistics, 1881—Continued.

Counties.	IRISH POTATOES.		SWEET POTATOES.		TURNIPS AND OTHER ROOT CROPS.	
	Acres........	Bushels produced......	Acres........	Bushels produced......	Acres........	Value of crop produced....
Adams	1,704	40,874	71	2,416	25	$1,141
Alexander	......	8,625	......	363	......	479
Bond	......	14,280	......	....	......	....
Boone	632	31,708	1	....	2	503
Brown	303	10,078	3	290	......	195
Bureau	1,339	48,093	4	164	4	129
Calhoun	......	7,890	......	10	......	....
Carroll	557	37,889	......	112	......	103
Cass	41	14,339	12	5,316	......	361
Champaign	2,000	55,806	25	1,050	50	375
Christian	612	24,660	16	1,455	22	2,049
Clark	324	20,851	2	288	1	56
Clay	211	8,217	4	34	6	52
Clinton	741	52,871	5	50	......	134
Coles	667	17,381	2	152	26	670
Cook	......	792,858	......	....	......	40,787
Crawford	375	15,191	15	60	25	112
Cumberland	......	7,156	......	4	......	....
DeKalb	1,140	50,589	1	210	8	40
DeWitt	236	14,591	4	203	1	100
Douglas	300	9,389	7	181	......	1,537
DuPage	1,997	241,541	2	....	13	200
Edgar	325	17,289	21	419	47	45
Edwards	......	13,712	......	....	......	306
Effingham	734	34,787	3	233	7	450
Fayette	94	26,580	2	625	......	205
Ford	163	5,171	1	....	......	....
Franklin	36	....	4	....	......	....
Fulton	489	40,894	6	1,725	......	1,501
Gallatin	246	4,800	4	....	4	....
Greene	335	10,822	17	733	62	8,427
Grundy	534	10,723	......	....	2	185
Hamilton	155	18,248	8	1,638	2	1,848
Hancock	938	31,005	23	702	38	232
Hardin	870	47,520	2	125	9	20
Henderson	38	2,503	......	592	9	10
Henry	......	30,412	......	143	......	330
Iroquois	1,292	23,638	7	574	45	28,203
Jackson	235	10,037	15	855	13	5
Jasper	422	19,009	25	607	9	466
Jefferson	......	14,763	......	817	......	2,936
Jersey	......	17,602	......	1,289	......	168
JoDaviess	1,251	63,595	......	65	5	256
Johnson	19	4,204	4	598	4	159
Kane	1,130	50,664	......	20	1	16,485
Kankakee	815	17,747	......	1,895	238	10
Kendall	701	16,876	......	....	......	225
Knox	976	44,514	54	1,437	4	233
Lake	1,703	81,759	......	....	6	1,540
LaSalle	2,607	75,564	3	45	187	166
Lawrence	360	15,192	12	544	8	118
Lee	1,711	....	11	....	100	....
Livingston	1,229	31,324	9	183	63	109
Logan	650	33,004	4	962	1	155
Macon	......	43,648	......	1,902	......	358
Macoupin	577	32,159	8	812	3	1,217
Madison	4,750	388,000	100	9,800	200	16,500
Marion	228	19,073	2	2,944	2	2,296
Marshall	360	15,147	3	4,909	......	....
Mason	......	....	......	....	......	....
Massac	114	10,011	87	1,379	26	260,409
McDonough	......	8,206	......	616	......	33
McHenry	949	86,512	......	10	1	765
McLean	1,500	50,947	15	559	15	1,288
Menard	399	13,783	67	4,028	153	6,896
Mercer	889	33,140	12	789	13	35
Monroe	1,357	43,792	......	....	......	25
Montgomery	889	35,914	2	1,810	4	271

Agricultural Statistics, 1881—Continued.

Counties.	IRISH POTATOES.		SWEET POTATOES.		TURNIPS AND OTHER ROOT CROPS.	
	Acres.........	Bushels produced.........	Acres.........	Bushels produced.........	Acres.........	Value of crop produced......
Morgan	2,515	100,000	100	2,500	55	$4,000
Moultrie	144	2,756	1	52	......	....
Ogle	1,054	80,992	81	713	8	209
Peoria	1,800	39,868	30	1,487	73	7,800
Perry	105	8,286	3	316	......	....
Piatt	166	28,246	130	247	2	40
Pike	560	12,323	8	291	100	12,826
Pope	2,216	61,931	191	3,014	......	1,271
Pulaski	......	....	......	....	1,100	....
Putnam	298	4,317	......	20	1	20
Randolph	604	37,837	31	1,852	5	107
Richland	342	15,079	4	275	......	....
Rock Island	1,330	90,122	1	70	15	885
Saline	......	7,803	......	251	......	....
Sangamon	379	34,940	8	2,642	16	538
Schuyler	264	18,836	3	737	13	949
Scott	149	3,604	3	178	......	13
Shelby	400	35,716	25	1,254	......	452
Stark	350	12,984	......	80	. ...	....
St. Clair	3,934	297,852	16	989	3	1,610
Stephenson	1,508	79,735	......	50	6	934
Tazewell	726	31,060	55	4,728	......	....
Union	500	23,806	350	23,733	50	4,701
Vermilion	607	24,584	6	1,059	16	212
Wabash	164	10,717	7	207	.....	....
Warren	348	15,875	2	112	3	373
Washington	798	33,187	22	903	15	421
Wayne	189	17,964	4	988	1	768
White	168	11,429	20	814	3	326
Whiteside	903	49,227	6	551	1	152
Will	2,589	66,974	.....	....	35	293
Williamson	......	9,460	......	5,381	......	3,789
Winnebago	951	67,482	......	....	2	1,630
Woodford	769	20,144	.....	221	59	101
Totals	72,079	4,472,339	1,815	114,486	3,046	$448,389

Agricultural Statistics, 1881—Continued.

Counties.	HEMP.		COTTON.			FLAX.		
	Acres....	Pounds of fibre produced....	Acres.....	Pounds of lint produced....	Bushels of seed produced....	Acres....	Pounds of fibre produced....	Bushels of seed produced....
Adams								
Alexander								
Bond								
Boone						215	6	1,191
Brown								
Bureau						78		
Calhoun								
Carroll						30		
Cass								700
Champaign						10,000	18,092	112,907
Christian								50
Clark			14					
Clay	10					1,602	555	5,433
Clinton								
Colos	16							20
Cook							408,542	62,332
Crawford								193
Cumberland								129
DeKalb						3,710	500	23,417
DeWitt						6		175
Douglas						825		4,582
DuPage						3,816	1,500	43,548
Edgar						85	11,340	643
Edwards								
Effingham						590	228	3,052
Favette				25				1,584
Ford						20,627	17,347	194,725
Franklin			1			28		
Fulton								
Gallatin						1		
Greene								15
Grundy				8	108	414	5,700	605
Hamilton								
Hancock						95		50
Hardin								
Henderson								
Henry								
Iroquois	17					33,205	60,930	237,047
Jackson				21,130	18			1
Jasper						2,343	5	4,466
Jefferson				10				
Jersey								100
Jo Daviess						447	8,919	2,329
Johnson					30			
Kano			56			150	1,800	1,444
Kankakee						2,544	6,620	24,547
Kendall						51	1,703	1,059
Knox	100	60,000				1		180
Lake						4,101	32,634	33,999
LaSalle						123	28	571
Lawrenco						36		184
Loe								
Livingston	46		27			16,634	3,106	141,653
Logan								
Macon							13,896	4,009
Macoupin						1		
Madison								
Marion				26	2,440	543	123	2,430
Marshall								735
Mason								
Massac			1	10				
McDonough								
McHenry						460	116	2,377
McLean		20				3,000	85,075	50,859
Menard								
Mercor								
Monroe						33		
Montgomery		25						
Morgan								
Moultrie	1					585	31,000	3,084
Ogle						315	100,000	3,478

Agricultural Statistics, 1881—Continued.

Counties.	HEMP.		COTTON.			FLAX.		
	Acres . .	Pounds of fibre produced	Acres.. .	Pounds of lint produced . .	Bushels of seed produced . .	Acres .	Pounds of fibre produced . .	Bushels of seed produced . .
Peoria		..	.....	....	.... ..	.....	....	....
Perry . . .			.....	.....	..		.	.
Piatt		....	.....	... . ..	....	2,873	209,064	29,246
Pike	..	.	. .	....	....	.....	......	...
Pope	.. ...	....	.. .	20	....	.. ..	....	. .
Pulaski	.....	. ..	.....	.... ..	... ..	......	.....	.... ..
Putnam	......	.....	.. .	.	. ...	.. .	....	......
Randolph	..	. ... ..	.. .		2	7	....	100
Richland	.. ..	.	93	..	..... .	52	....	1,400
Rock Island	.....	....	.....	.. .. .		.. .	....	..
Saline	. .	... .	.....	..	..	. ...	......	....
Sangamon	..	.	.	.... ..	..... .	..	.....	
Schuylor	..	....		.... ..	.....	..	80	..... .
Scott	..	. ..		. ..		.. .	.... .	....
Shelby	.....	. .. .	.....		....	.. ..	42	161
Stark	. .	....	.....		......	.....	. .	....
St. Clair	..	... .	...	......	..... .	. ..		.....
Stephenson		....	....			..	48	1,078
Tazewell . .	.....	..	.. ..	..	....	. ...	.	.. ..
Union	..	....	1	..			...	
Vermilion	. .	....	.	..... .		8,358	1,658,667	44 471
Wabash	.	. ..		..... .	..... .	15	....	.... .
Warren	. .		..	.... .	....		..	. .
Washington	.....	.		.... ..	....	31	...	..... .
Wayne	. ...	.	..	. .	.	119	6,000	561
White	1	....	1	.	2	. ..	..... .	....
Whiteside	.		.	..	...		....	.
Will	.. .	.....		..	....	1,332	207	9,460
Williamson		.. ...		..... .	.	. .	....	...
Winnebago		...	.			.	... . .	....
Woodford		..... .		.		8	.... .	35
Totals	191	6,045	194	21,229	2 600	119,489	2,683,903	1 055 413

Agricultural Statistics, 1881—Continued.

Counties.	TOBACCO.		BROOM CORN.		SORGHO.		OTHER CROPS NOT NAMED.	
	Acres.	Pounds produced.	Acres.	Pounds produced.	Acres.	Gallons syrup made.	Acres.	Value of crop produced.
Adams		2,870	2	4,000	139	6,972	190	$1,750
Alexander						2,252		1,359
Bond								
Boone	7	2,200	180	120,000	3		20	
Brown		1,000			120	4,534		368
Bureau	1	130			39	1,699	44	
Calhoun								
Carroll	2	31,500		6,000	48	2,431	9	
Cass						2,822		2,300
Champaign	5	108	1,000	543,400	200	7,939	150	115
Christian				8,000	31	1,792		
Clark	1	2,657	4	450	189	3,492	102	16
Clay	2	750			133	238		
Clinton	2	100			27	5		
Coles	24	13,860	6,124	12,336,440	94	4,811		
Cook		22,500				1,634		10,490
Crawford	75	31,409	6	3,250	200	1,244		
Cumberland		1,335		18,880		1,799		1,071
DeKalb	5				3	65	282	2,234
DeWitt	2	175	58	14,400	17	769	226	2,322
Douglas		25	8,250	4,623,260	50	3,252	150	
DuPage			3		4	880	662	850
Edgar	6	3,290	485	338,460	38	1,927		
Edwards						53		
Effingham	4	2,275	1		284	2,957	36	8,921
Fayette	4	3,569		80	21	295		6
Ford			12		20	296	71	
Franklin	48		1		160		20	
Fulton		1,767	9	5,629	113	11,864	150	4,495
Gallatin					117	7,800	46	
Greene	9	125		1,961	27		12	
Grundy					2	295	37	2,389
Hamilton	51	51,066			81	2,054		10
Hancock	2		24	3,000	187	16,595	165	
Hardin	1	1,200			68			
Henderson		100	7		22	854	10	155
Henry				2,991,712		5,731		127,181
Iroquois		487	45	1,000	112	9,108	618	4,190
Jackson		4,300	4	2,400	40	386	291	2,515
Jasper	3	1,650			219	1,435	17	144
Jefferson		2,465				5,095		38
Jersey		155		500		345		304
JoDaviess	425	672,161	10	10,000	22	3,048	32	170
Johnson	19	7,010	2	5,800	84	2,387		10
Kane		1,200					37	1,300
Kankakee			27	5,000	43	2,333	701	6,629
Kendall					3	452	178	1,010
Knox	1,298	160		562,800	105	8,632	198	3,203
Lake	1				14	1,793	965	7,342
LaSalle		125	50	6,800	84	3,763	7	20
Lawrence	8	3,185	7		148	1,231	142	1,015
Lee	56				19		121	
Livingston		155	21	9,800	96	7,811	842	197,396
Logan			48	7,500	10	458	14	2,968
Macon		739		4,050		1,990		1,125
Macoupin		645		12,000	79	3,381	102	1,185
Madison		12,000	300	3,200,000	300	157,500	5,400	
Marion	2	6,601	5		43	737	20	175
Marshall			23	18,000	10	2,659	3	
Mason								
Massac	84	23,283			77	3,764	16	447
McDonough						5,357		
McHenry		700		14,000	95	2,738	256	44,052
McLean		4,128		6,335	75	4,521	25	1,813
Menard	5	3,227	7	4,163	160	10,764	189	672
Mercer		85	280	133,200	123	9,005	121	268
Monroe					66	791	87	1,105
Montgomery		450	7	5,000	22	328	1,106	137
Morgan	8	3,500	32	15,000	75	450	160	7,350
Moultrie	1	150	214	56,900	32	645	91	
Ogle			45	9,350	30	4,308	894	235

Agricultural Statistics, 1881—Continued.

Counties.	TOBACCO.		BROOM CORN.		SORGHO.		OTHER CROPS NOT NAMED.	
	Acres.	Pounds produced.	Acres.	Pounds produced.	Acres.	Gallons syrup made.	Acres.	Value of crop produced.
Peoria	2	....	71	24,500	150	10,318	19	7,444
Perry	....	....	....	....	20	....	....	....
Piatt	....	1,000	40	422,200	7	1,378	1	20
Pike	13	2,760	11	2,300	77	1,234	8	105
Pope	....	3,950	....	....	592	8,112	....	1,628
Pulaski	45	....	....	....	275	....	50	....
Putnam	....	....	....	5,500	42	165	....	....
Randolph	1	4,616	1	....	107	2,215	1	125
Richland	....	2,555	6	....	154	674	....	....
Rock Island	....	....	58	....	23	1,997	19	116,646
Saline	141	185,495	3	....	33	6,380	....	....
Sangamon	1	575	2	14,230	17	2,545	524	4,207
Schuyler	1	1,768	32	11,235	97	9,139	53	....
Scott	....	....	....	....	5	625	....	....
Shelby	....	1,590	50	700	100	7,840	29	....
Stark	....	40	22	100,000	15	2,506	....	....
St. Clair	....	375	....	....	19	561	38	2,588
Stephenson	140	384,190	15	4,300	19	4,596	277	511
Tazewell	....	600	....	....	35	3,403	....	....
Union	1	2,165	4	140	150	5,762	320	26,195
Vermilion	1	925	....	....	586	3,128	175	100
Wabash	....	2,000	10	....	56	671	3	....
Warren	....	10,000	155	....	81	14,713	70	....
Washington	5	623	6	25	72	55	2	492
Wayne	13	11,450	....	....	187	582	1	142
White	35	3,366	5	....	127	2,083	147	838
Whiteside	....	2,500	....	....	11	706	....	6
Will	....	....	22	3,000	3	238	212	20
Williamson	1,298	202,049	....	4,600	521	5,095	....	26
Winnebago	....	120	75	7,000	8	1,161	454	6,850
Woodford	1	290	3	....	51	2,286	30	2,779
Totals	3,854	1,747,474	17,887	25,708,250	8,263	456,714	17,448	$623,572

Agricultural Statistics, 1881—Continued.

Counties.	APPLE ORCHARDS.		PEACH ORCHARDS.		PEAR ORCHARDS.		VINEYARDS.		FRUITS AND BERRIES, NOT INCLUDED IN ORCHARDS.	
	Acres.	Bushels produced.	Acr's	Bushels produced.	Acr's	Bushels produced.	Acr's	Gallons wine produced.	Acr's	Value of crop produced.
Adams	6,140	25,401	102		7	35	112	200	158	$6,316
Alexander		1,986								
Bond		24,780								
Boone	1,573	6,226					1	100	4	25
Brown	1,504	9,850	46				6	5	4	240
Bureau	4,608	36,403	12	20	1	16	46	837	9	183
Calhoun		37,430						1,155		
Carroll	1,967	6,898					8	20	193	205
Cass	538	4,902		50			1	481		1,095
Champaign	5,000	40,762	150	8	2	9	25	76	75	2,[illegible]33
Christian	3,865	37,927	161	21	1		31	127	287	250
Clark	2,412	25,223	28				2	55	7	21
Clay	2,404	16,554	53		3		6		14	40
Clinton	3,831	20,243	17		3		54	875	53	100
Coles	2,403	53,632	69	10	13		6		11	65
Cook		44,931				25		757		980
Crawford	1,856	26,735	40							
Cumberland		14,889								
DeKalb	3,403	11,928	2		1				2	250
DeWitt	2,082	14,668	40	75			6		2	130
Douglas	1,801	38,538	69		8	6	7	20	5	60
DuPage	1,839	20,377			2		10	20	17	180
Edgar	2,611	45,304	67	50	4	8	35		66	50
Edwards	670	5,088	8	15						
Effingham	1,869	25,232	74		1		16	50	32	6
Fayette	625	42,396	14	195			8			1,456
Ford	2,075	3,281	1				2			
Franklin	1,142		52		4		2		1	
Fulton	3,716	24,604	55	95	4	25	34		27	1,308
Gallatin	3,736	10,950	68	2,350	4		4		2	
Greene	1,448	33,411	159	195	32	220	15		56	
Grundy	1,029	10,748	2	100			2		17	1,400
Hamilton	2,080	18,117	51	1,389	1		4			
Hancock	6,018	49,630	109	151	7	100	466	14,524	210	308
Hardin	686	2,517	122	230		10	2	60		
Henderson	1,407	11,970	6				19	240		40
Henry		27,369		1,876				186		375
Iroquois	5,015	13,453	49	10			14	13	17	74,529
Jackson	2,865	37,548	347	5,028	26	230	22	85	198	7,418
Jasper	1,689	18,758	58	1	3	1	18		9	3,089
Jefferson		41,914		91		84				900
Jersey		31,608		103		92		7,987		576
JoDaviess	2,202	9,372					40	3,985	33	935
Johnson	1,735	29,266	238	11,715		52			17	1,757
Kane	2,576	16,677				5			3	
Kankakee	2,523	18,079	4	15	8		23	320	12	1,870
Kendall	2,746	12,995	4				17			50
Knox	4,401	51,877	22	24	1		29	8	50	1,411
Lake	2,967	58,278	1	300	1	7	7		7	
LaSalle	6,120	32,800	6		3	10	14		27	1,449
Lawrence	2,595	11,739	44	30	5		7			
Lee	3,810		2		2		18		105	
Livingston	4,568	29,431	18		1	10	28	1,357	12	349
Logan	2,385	24,018	21		3	5	10	434	3	915
Macon		48,139		200		3		575		1,146
Macoupin	5,249	106,499	116	5,357	5	40	19	30	19	
Madison	6,580	87,275	112	13,500	40	7,500	1,160	55,000	1,600	20,000
Marion	3,420	41,472	115	265	6	30	13	105	50	3,603
Marshall	1,553	22,627	1		1		8		3	
Mason										
Massac	1,336	6,160	35	2,857		200	1			18
McDonough	2,600	8,909		10			50			
McHenry	1,694	15,974				4	17	60	96	1,442
McLean	7,055	44,934	60	162	1	47	43	3,710	20	2,219
Menard	1,732	22,765	27	1,472	4		25	3,304	27	577
Mercer	3,192	42,406	3		1		26	625	13	602
Monroe	1,600	12,973				25	157	12,946		
Montgomery	4,824	57,434	71	80	5	20	28	20	47	
Morgan	3,622	45,000	127		3		12	1,500	47	2,500

Agricultural Statistics, 1881—Continued.

Counties.	APPLE ORCHARDS.		PEACH ORCHARDS.		PEAR ORCHARDS.		VINEYARDS.		FRUITS AND BERRIES NOT INCLUDED IN ORCHARDS.	
	Acres.	Bushels produced.	Acr's	Bushels produced.	Acr's	Bushels produced.	Acr's	Gallons wine produced.	Acr's	Value of crop produced.
Moultrie	1,706	6,448	156	5	2	......	7	110	1	......
Ogle...	2,915	19,727	......	......	......	......	6	6	7	$346
Peoria	2,623	22,110	11	......	2	......	60	2,951	17	965
Perry.........	937	......	34	......	17	......	5	1,700	......	......
Piatt...	1,320	17,637	35	115	......	19	8	180	16	195
Pike..........	4,198	27,190	59	......	......	......	43	18	15	......
Pope....... .	1,406	22,496	775	23,350	144	36	......	408	......	38
Pulaski	1,441	......	300	......	300	......	200	......	500	......
Putnam......	1,049	11,651	5	......	......	......	1	100	......	30
Randolph...	2,664	38,899	119	193	5	40	28	782	3	405
Richland ...	2,528	15,162	29	......	1	10	17	......	......	25
Rock Island..	2,325	60,567	6	1,690	1	......	45	1,315	17	2,441
Saline.	1,695	6,591	86	3,292	......	......	......	......	......	......
Sangamon...	2,739	55,542	62	640	6	10	52	455	24	2,421
Schuyler	1,979	8,530	37	......	6	......	13	......	24	100
Scott..	623	6,110	36	60	......	......	33	123	......	27
Shelby........	3,585	48,260	114	......	19	19	39	175	......	93
Stark..	1,210	12,616	4	......	......	......	2	55	......	520
St. Clair ...	4,455	58,806	43	122	3	144	176	6,397	202	991
Stephenson..	3,273	5,604	......	......	......	......	7	......	8	94
Tazewell....	2,995	37,146	17	......	1	......	36	96	28	1,779
Union... . ..	3,440	58,953	543	10,654	142	4,877	3	435	2,580	35,705
Vermilion. ..	3,230	41,767	46	28	2	131	6	8	18	1,188
Wabash	1,446	9,185	6	10	1	......	......	......	......	......
Warren......	2,480	26,306	3	......	......	......	8	50	3	125
Washington	2,508	33,037	39	25	2	......	13	100	58	1,168
Wayne.	3,641	16,835	65	2	1	5	3	......	16	1,450
White	1,884	5,079	113	153	1	......	1	......	2	......
Whiteside	2,547	25,922	......	141	......	......	4	......	9	1,055
Will	4,402	22,514	......	......	15	......	16	2,300	366	115
Williamson	3,385	47,516	328	7,577	24	35	10	......	29	312
Winnebago.	2,357	20,765	3	......	......	......	1	......	55	5,005
Woodford. ..	2,756	39,276	8	400	......	......	84	220	5	130
Totals... ..	251,034	2,659,527	6,143	96,507	912	14,135	3,663	129,839	7,670	$202,086

Agricultural Statistics 1881—Continued.

Counties.	UNCULTIVATED ACREAGE.						
	Past'res.	Wood-land.	Uncul-tivated land.	Area city and town real es-tate.	Total number of acres reported	Acres not reported	Total Ac'ge as ret'd to State Aud'r 1881, except as noted...
Adams	47,367	79,950	35,103	1,920	394,860	133,145	*528,005
Alexander	....	....	....	....	....	109,381	*109,381
Bond	....	....	....	....	....	252,311	§252,311
Boone	54,145	16,489	7,331	833	172,472	5,342	177,814
Brown	6,456	10,640	7,796	870	98,227	92,020	190,247
Bureau	96,759	15,573	19,372	1,387	407,663	140,668	548,331
Calhoun	1,585	52,510	12,308	....	106,854	59,359	*166,213
Carroll	58,914	21,756	10,694	1,164	239,274	49,048	288,322
Cass	11,770	7,485	1,122	....	69,808	170,934	240,742
Champaign	100,000	25,000	160,747	4,394	631,883	....	631,883
Christian	60,682	19,368	13,346	19,780	358,821	88,938	447,759
Clark	21,818	49,419	15,568	475	202,621	119,501	§322,122
Clay	17,746	39,219	11,061	40	169,047	111,543	*280,590
Clinton	20,571	43,059	61,244	891	290,853	14,528	§305,381
Coles	50,301	83,214	51,103	2,140	316,476	5 343	§321,819
Cook	....	....	....	....	....	514,092	*514,092
Crawford	30,000	34,145	6,627	480	175,480	100,121	*275,601
Cumberland	....	....	....	....	....	220,829	§220,829
DeKalb	89,636	13,307	9,171	2,775	334,530	64,833	*399,363
DeWitt	39,612	14,524	15,975	1,217	200,962	50,695	251,657
Douglas	47,543	10,473	10,320	2,320	216,502	46,564	*263,066
DuPage	34,629	8,736	7,446	1,835	128,768	77,309	§206,077
Edgar	78,455	21,621	12,121	614	264,085	134,515	*398,600
Edwards	4,173	30,556	53,438	940	141,523	....	141,523
Effingham	18,558	35,709	22,365	3,265	209,453	72,146	281,599
Fayette	4,017	8,629	6,576	4.340	47,291	367,513	§414,804
Ford	33,604	1,897	20,461	....	249 321	65,438	314,759
Franklin	2,039	8,857	2,354	69	70,355	178,555	248,910
Fulton	46,920	53,025	19,437	589	285,302	264,671	*549,973
Gallatin	2,216	23,160	76,460	....	172,236	28,329	*200,565
Greene	38,893	24,334	10,982	....	176,886	166,311	*343,197
Grundy	44,126	2.395	6,744	38	159,417	109,365	268,782
Hamilton	4,868	153,580	1,511	890	229,676	44,286	§273,962
Hancock	60,414	29,305	20,729	245	335,446	158,198	*493,644
Hardin	2,603	13,301	1,133	....	33,148	76,260	*109,408
Henderson	37,784	12,934	39,118	340	176,664	62,154	238,818
Henry	....	....	....	....	....	515,379	*515,379
Iroquois	92,132	13,257	23,387	678	519,645	185,873	*705,518
Jackson	5,243	58,071	38,070	1,878	192,459	127,747	320,206
Jasper	12,515	31,292	15,017	....	169,202	141 440	310,642
Jefferson	....	....	....	....	....	336,156	336,156
Jersey	....	....	....	....	....	233,233	*233,233
JoDaviess	55,895	77,643	36,585	611	302,691	74,760	§377,451
Johnson	3,464	83,916	1,292	40	137,006	72,407	§209,413
Kane	88,508	18,370	2,580	2,281	252,136	70,999	§323,135
Kankakee	47,445	4,88[illegible]	11,756	309	278,687	141,966	*420,653
Kendall	49,444	13,671	2,557	3,646	200,095	2,281	202,376
Knox	130,902	33,125	13,438	1,995	428,373	20,044	448,417
Lake	65,797	25,920	13,412	3,100	222,099	62,174	§284,273
LaSalle	91,560	36,706	11,139	8,139	539,039	172,893	711,932
Lawrence	11,339	39,927	80,642	1,786	234,409	....	234,406
Lee	74,120	17,910	27,970	....	398,589	58,617	†457,206
Livingston	79,763	6,098	18,025	1,162	527,127	127,913	*65[illegible],040
Logan	44,840	15,385	5,499	207	278,758	113,188	391,946
Macon	....	....	....	....	....	366,266	*366,266
Macoupin	68,385	47,045	12,030	2,853	378,324	164,893	*543,217
Madison	38,500	66,000	29,220	....	419,167	29,447	*448,614
Marion	24,816	40,934	8,522	7,036	192,292	146,080	338,372
Marshall	28,796	13,794	14,175	924	152,359	95,611	247,970
Mason	....	....	....	....	....	351,328	*351,328
Massac	1,922	21,735	22,859	43	83,900	65,151	159,051
McDonough	36,000	28,000	7,000	....	254,650	109,440	364,090
McHenry	76,697	18,368	18,120	1,106	225,799	158,466	*384,265
McLean	129,000	23,800	27,700	5,041	598,710	145,525	*744,235
Menard	39,275	15,350	9,350	858	199,788	....	199,788
Mercer	77,438	21,312	17,333	2,743	293,225	54,598	347,813
Monroe	5,101	55,517	8,778	....	164,705	66,948	231,653
Montgomery	64,449	74,456	49,178	4,843	444,650	....	444.650
Morgan	89,672	61,992	....	4,187	357,794	....	357,794
Moultrie	24,567	7,412	5,910	3	122,118	94,093	*216,211
Ogle	68,246	17,757	4,929	748	320,839	158,323	479,162

Agricultural Statistics 1881—Continued.

Counties.	UNCULTIVATED ACREAGE.						
	Past'res.	Wood-land.	Uncultivated land.	Area city and town real estate.	Total number of acres reported	Acres not reported	Total Ac'ge as ret'd to State Aud'r 1881, except as noted...
Peoria	43,665	42,150	6,709	....	262,124	124,803	386,927
Perry	4,756	26,980	116,867	890	225,245	20,678	245,923
Platt	29,607	2,413	7,803	52,495	200,550	75,027	§275,577
Pike	81,100	53,714	163,865	2,695	486,131	25,833	511,964
Pope	3,200	164,592	9,556	300	230,402	2,564	232,966
Pulaski	662	80,323	....	700	112,535	208	112,743
Putnam	20,598	20,489	17,556	435	105,896	101	*105,997
Randolph	10,798	55,319	6,197	....	206,702	150,985	*357,687
Richland	11,065	34,366	7,067	644	142,122	85,152	*227,274
Rock Island	33,290	22,176	21,417	1,234	176,892	89,679	§266,571
Saline	3,684	....	....	....	63,729	176,899	*240,628
Sangamon	77,626	11,716	4,072	1,250	282,534	265,172	547,706
Schuyler	22,235	44,503	69,764	3,055	228,009	48,294	*276,303
Scott	16,205	17,288	4,582	1,096	100,303	56,491	*156,794
Shelby	45,000	35,666	26,000	750	306,196	178,529	484,725
Stark	27,352	6,541	47	160	140,015	40,946	180,961
St. Clair	14,977	26,466	6,778	755	302,309	115,742	418,051
Stephenson	50,849	19,302	5,441	172	262,202	95,038	§357,240
Tazewell	37,022	28,630	6,071	704	266,541	142,207	*408,748
Union	4,175	39,400	4,100	474	114,488	106,004	220,492
Vermillion	126,363	35,273	11,335	510	413,914	150,788	564,702
Wabash	6,296	32,932	6,343	8	101,016	51,571	152,587
Warren	83,332	22,466	10,773	3,382	320,342	19,459	339,801
Washington	14,064	35,889	6,572	....	197,385	144,274	341,659
Wayne	27,953	48,023	118,983	80	313,940	135,670	*449,610
White	7,537	83,943	29,614	2,220	334,374	79,440	†313,814
Whiteside	55,323	5,588	6,632	....	243,244	189,168	§432,412
Will	89,807	17,047	6,863	....	386,717	137,975	§524,692
Williamson	13,537	117,348	16,385	300	254,648	957	255,605
Winnebago	54,256	13,651	6,640	25,456	255,741	66,361	§322,102
Woodford	47,625	25,181	14,481	3,804	296,907	40,275	337,182
Total	3,857,994	3,123,329	2,004,749	213,637	23,187,692	11,433,774	34,621,466

*Assessors' returns, 1878.
§Assessors' returns, 1879.
†Assessors' returns, 1880.

Agricultural Statistics 1881 *and* 1882—Continued.

Counties.	HORSES	COLTS.	HORSES, ANY AGE, DIED OF DISEASE.	
	Total number May, 1882.	Number foaled, 1881.	Number, 1881.	Total value, 1881.
Adams	10,122	912	428	$28,557
Alexander	703	64	40	2,995
Bond	....	504	378	....
Boone	4,937	610	176	12,150
Brown	4,417	468	166	8,663
Bureau	14,296	1,837	725	49,204
Calhoun	1,827	172	123	5,400
Carroll	7,779	1,003	262	19,680
Cass	4,240	354	271	19,036
Champaign	17,171	1,724	895	56,994
Christian	11,711	1,050	574	32,447
Clark	4,425	417	323	14,844
Clay	3,960	406	321	13.185
Clinton	5,667	426	482	22,328
Coles	8,206	683	395	24,669
Cook	20,142	921	268	31,088
Crawford	3,948	495	280	14,297
Cumberland	3,078	266	256	12,086
DeKalb	13,558	1,543	496	35,000
DeWitt	7,946	787	489	30,212
Douglas	6,302	415	229	18,750
DuPage	5,097	491	160	13,343
Edgar	9,726	886	502	30,374
Edwards	2,772	197	195	7,659
Effingham	5,092	398	288	12,540
Fayette	6,347	475	407	21,789
Ford	6,336	660	326	20.999
Franklin	....	....	....	....
Fulton	14,700	1,658	688	36,903
Gallatin	2,566	381	85	2,860
Greene	6,723	900	362	23,941
Grundy	6,220	582	239	17,453
Hamilton	4,030	475	436	17,791
Hancock	12,571	1,432	528	28,226
Hardin	741	58	38	2.065
Henderson	5,872	774	327	22,688
Henry	37,445	2,576	617	36,290
Iroquois	13,050	1,637	962	47,046
Jackson	3,917	330	351	9,765
Jasper	4,626	406	451	18,976
Jefferson	4,673	431	293	13,303
Jersey	4,530	250	313	14,522
JoDaviess	7,217	848	304	17,716
Johnson	1,973	158	96	4,736
Kane	7,495	758	267	19,579
Kankakee	8,287	977	422	26,568
Kendall	6,614	470	166	11,047
Knox	15,183	1,891	684	42,487
Lake	....	....	....	....
LaSalle	23,804	2,425	991	62,501
Lawrence	3,604	316	263	10,040
Lee	....	....	....	....
Livingston	20,428	2,533	845	52,790
Logan	11,226	1,022	497	39,032
Macon	11,863	1,188	594	32,690
Macoupin	14,658	1,446	772	41,312
Madison	10,263	2,566	1,081	54,050
Marion	5,695	555	472	23,610
Marshall	6,223	561	272	20,054
Mason	....	....	....	....
Massac	1,450	79	59	2,790
McDonough	6,291	784	288	11,296
McHenry	9,688	1,087	259	16,268
McLean	23,012	2,923	1,035	63,731
Menard	4,260	541	221	8,826
Mercer	10,930	1,398	840	53,210
Monroe	3,184	165	167	10,640
Montgomery	12,231	1,124	1,181	41,681
Morgan	7,189	532	276	19,332
Moultrie	5,299	409	212	12,198
Ogle	12,742	1,431	510	31,217
Peoria	10,355	1,097	412	25,390

Agricultural Statistics 1881 *and* 1882—Continued.

Counties.	HORSES	COLTS.	HORSES, ANY AGE, DIED OF DISEASE.	
	Total number May, 1882.	Number foaled, 1881.	Number, 1881.	Total value, 1881.
Perry	1,681	82	27	$1,725
Platt	6,537	701	413	27,226
Pike	2,711	548	283	52,071
Pope	2,338	238	144	6,873
Pulaski	....	....	....	....
Putnam	3,013	375	132	9,987
Randolph	5,105	430	357	17,819
Richland	4,176	253	258	10,553
Rock Island	6,457	841	312	15,894
Saline	2,655	245	135	6,353
Sangamon	14,810	1,769	872	54,628
Schuyler	6,601	738	2,193	15,728
Scott	2,571	238	101	7,110
Shelby	9,533	840	561	25,599
Stark	6,224	663	504	18,865
St. Clair	8,305	603	441	27,726
Stephenson	10,212	1,124	474	32,433
Tazewell	10,120	1,194	518	37,851
Union	3,705	311	206	12,175
Vermilion	13,038	1,347	698	41,963
Wabash	2,656	222	258	7,080
Warren	12,429	1,659	659	38,203
Washington	5,033	521	441	22,324
Wayne	5,658	524	503	22,848
White	4.152	392	363	19,148
Whiteside	10,970	1,329	498	30,372
Will	12,433	1,338	491	34,744
Williamson	3,825	336	186	7,679
Winnebago	8,709	890	287	20,417
Woodford	9,941	2,066	421	25,802
Total	768,234	80,150	41,000	$2,251,016

Agricultural Statistics, 1881 *and* 1882—Continued.

Counties.	CATTLE.	FAT CATTLE SOLD.		CATTLE DIED OF DISEASE.	
	Total number May, 1882.	Number 1881.	Total gross weight 1881.	Number 1881.	Total value 1881.
Adams	21,747	4,526	4,628,020	472	$8,742
Alexander	1,476	909	255,785	56	4,592
Bond	....	252	97,650	......	....
Boone	21,194	2,990	2,812,207	250	6,275
Brown	9,386	1,935	1,853,151	99	1,953
Bureau	40,654	11,798	12,533,649	934	23,162
Calhoun	3,453	380	280,251	97	1,910
Carroll	33,226	6,264	7,213,395	390	6,901
Cass	8,505	4,262	5,459,054	190	5,964
Champaign	32,290	7,414	8,740,541	461	13,302
Christian	24,825	8,046	8,540,028	467	14,616
Clark	8,298	2,372	2,279,681	307	6,410
Clay	7,632	1,755	1,067,267	417	5,453
Clinton	7,357	1,756	1,186,598	346	7,664
Coles	18,742	8,218	8,195,381	366	8,903
Cook	41,379	3,073	2,136,472	329	8,755
Crawford	6,683	1,372	1,068,573	241	13,919
Cumberland	6,169	890	894,858	233	4,082
DeKalb	52,196	8,112	8,557,904	729	18,475
DeWitt	16,060	3,817	4,560,205	314	7,297
Douglas	10,875	6,256	6,661,861	137	3,176
DuPage	20,147	2,909	2,909,640	217	6,632
Edgar	25,915	14,706	17,587,830	442	12,776
Edwards	6,034	1,096	721,969	117	2,432
Effingham	10,400	1,356	890,132	306	4,481
Fayette	9,170	3,271	1,642,761	572	10,882
Ford	10,680	2,585	2,591,717	92	2,192
Franklin	....	......	....	......	....
Fulton	36,989	8,445	8,110,598	815	25,960
Gallatin	5,822	1,512	951,905	20	213
Greene	15,980	8,026	7,276,503	406	12,740
Grundy	15,667	4,405	3,929,100	352	7,411
Hamilton	6,171	2,412	1,332,465	429	5,192
Hancock	31,481	10,382	11,428,848	622	11,804
Hardin	1,340	439	216,850	25	384
Henderson	16,906	4,971	6,059,960	151	3,745
Henry	43,427	9,213	9,516,896	715	13,840
Iroquois	28,387	7,877	8,861,355	483	9,359
Jackson	4,628	2,622	936,376	153	3,324
Jasper	8,644	2,599	1,864,635	470	12,630
Jefferson	6,121	4,364	2,996,391	181	2,679
Jersey	7,291	1,613	1,458,474	4,539	68,936
JoDaviess	36,350	5,885	6,161,557	537	11,306
Johnson	2,297	997	562,667	68	958
Kane	39,427	6,467	5,328,736	321	8,245
Kankakee	22,430	4,681	4,940,650	318	7,885
Kendall	20,387	4,079	4,171,025	195	4,093
Knox	42,621	9,955	11,733,312	663	17,968
Lake	....	2,267	1,930,025	......	....
LaSalle	52,275	14,358	14,755,844	707	16,287
Lawrence	7,123	1,873	1,022,206	289	4,857
Lee	....	10,000	13,500,000	......	....
Livingston	38,037	6,457	5,910,615	473	12,882
Logan	20,103	5,776	7,074,401	352	10,901
Macon	21,411	6,803	6,623,016	309	9,521
Macoupin	24,175	10,715	7,409,221	860	17,043
Madison	12,058	2,300	2,300,000	520	13,000
Marion	9,147	3,950	2,969,674	......	65,552
Marshall	12,793	2,900	2,852,745	213	5,672
Mason	....	......	....	......	....
Massac	2,340	662	337,964	61	814
McDonough	14,156	4,778	4,824,401	171	3,779
McHenry	43,363	5,573	8,004,080	407	11,588
McLean	45'514	14,412	16,612,698	654	17,740
Menard	8,701	6,953	7,252,300	111	1,675
Mercer	35,008	9,776	10,964,078	975	22,793
Monroe	3,288	452	252,190	55	1,549
Montgomery	16,719	5,366	3,913,690	646	13,002
Morgan	16,017	10,320	13,861,296	178	5,240
Moultrie	10,622	3,407	2,929,643	95	3,686
Ogle	46,264	9,414	9,795,014	760	14,470

Agricultural Statistics, 1881 *and* 1882—Continued.

Counties.	CATTLE.	FAT CATTLE SOLD.		CATTLE DIED OF DISEASE.	
	Total number May, 1882.	Number 1881.	Total gross weight 1881.	Number 1881.	Total value 1881.
Peoria	23,198	4,658	5,157,801	388	$9,329
Perry	2,340	1,509	739,400	37	573
Piatt	12,460	3,316	3,205,179	162	6,236
Pike	15,450	3,080	2,536,495	304	5,724
Pope	3,114	1,206	561,804	93	2,919
Pulaski	....	....	....	......	....
Putnam	8,701	2,620	3,791,944	69	1,835
Randolph	7,377	2,182	1,295,516	214	3,594
Richland	7,395	2,130	1,753,312	476	6,814
Rock Island	21,792	5,939	6,132,822	352	8,368
Saline	3,856	1,228	690,140	49	789
Sangamon	39,151	24,390	22,823,266	662	22,372
Schuyler	16,353	3,674	3,912,626	330	6,671
Scott	6,600	2,104	2,536,682	83	2,228
Shelby	21,900	5,529	5,174,201	743	15,769
Stark	13,919	3,676	4,510,536	198	4,920
St. Clair	9,149	1,204	1,002,635	205	5,774
Stephenson	37,692	6,060	5,793,050	1,058	21,394
Tazewell	22,346	5,042	5,242,691	399	8,675
Union	4,622	1,734	920,188	143	2,236
Vermilion	32,642	13,607	15,551,199	500	13,669
Wabash	4,713	1,593	926,788	248	4,280
Warren	34,583	13,560	17,054,593	585	18,417
Washington	7,180	2,040	1,176,830	385	6,399
Wayne	11,811	4,097	2,831,853	413	13,162
White	7,348	3,106	1,940,514	316	4,614
Whiteside	39,744	7,245	9,992,483	862	22,208
Will	38,195	8,096	8,561,066	557	13,382
Williamson	4,070	1,701	883,732	69	1,117
Winnebago	32,285	5,239	5,751,599	346	12,568
Woodford	19,792	3,125	3,341,822	443	9,225
Total	1,795,741	496,526	500,974,754	38,574	$946,930

Agricultural Statistics 1881 *and* 1882—Continued.

Counties.	DAIRY.						BEES.	HONEY
	Number cows kept, 1882..	Number cows kept, 1881..	Pounds butter sold, 1881	Po'nds che'se sold, 1881...	Gals. cream sold, 1881....	Gallons milk sold, 1881...	Numb'r hives, 1882.......	Pounds produced, 1881..
Adams	6,682	6,932	159,157	3,310	346	25,333	640	2,235
Alexander	367	379	1,890	100	....	....	460	9,528
Bond	....	1,827	91,665	2,625	....	22,995	....	....
Boone	10,464	10,061	487,378	418,843	12,396	2,168,226	178	3,111
Brown	2,841	2,849	49,910	....	25	1,515	395	4,125
Bureau	10,865	10,756	332,093	30,934	6,553	10,370	1,209	9,957
Calhoun	1,240	1,359	4,220	....	....	....	435	2,210
Carroll	10,963	10,163	539,602	49,080	66,041	77,346	298	2,034
Cass	1,700	2,155	30,202	550	....	806	1,159	6,317
Champaign	8,170	8,126	217,545	20,287	28	19,024	2,436	15,045
Christian	4,958	5,230	142,413	1,920	40	24,000	1,625	8,982
Clark	3,820	3,905	83,128	....	....	70	1,102	7,257
Clay	2,375	2,606	46,791	....	....	50	1,370	6,588
Clinton	3,776	3,996	77,595	190	328	91,300	829	3,584
Coles	4,383	4,401	83,924	900	....	14,593	1,139	9,287
Cook	23,053	26,215	582,322	419,401	3,865	5,719,486	231	2,925
Crawford	2,553	2,817	53,979	100	....	....	883	3,614
Cumberland	2,098	2,248	32,999	....	....	770	915	9,468
DeKalb	21,691	20,426	1,121,273	310,655	83,712	1,482,411	360	10,049
DeWitt	3,984	3,956	119,421	580	340	20,69	1,053	8,253
Douglas	2,504	2,554	71,962	....	20	5,000	781	9,250
DuPage	14,023	15,701	661,442	604,533	100	6,768,776	19	112
Edgar	4,549	4,553	93,615	100	150	9,920	1,052	5,617
Edwards	1,930	2,184	23,500	....	....	....	400	1,796
Effingham	3,921	4,296	69,783	....	101	12,970	1,736	1,415
Fayette	2,981	3,439	55,280	290	50	4,800	1,568	4,601
Ford	2,678	2,594	95,406	....	1,175	2,485	369	1,784
Franklin	......	......	....	....	....	....	......	......
Fulton	9,432	9,729	287,448	725	130	35,508	1,799	9,038
Gallatin	801	1,190	11,922	....	....	150	412	2,517
Greene	3,119	3,426	85,136	100	....	196	565	3,643
Grundy	5,922	5,737	275,070	349	31,092	5,504	650	6,303
Hamilton	2,064	2,802	16,890	100	....	....	859	8,537
Hancock	7,437	7,951	233,594	13,441	2,800	930	1,351	11,960
Hardin	113	443	5,565	....	....	....	303	1,555
Henderson	1,894	1,958	28,801	7 600	978	615	187	1,696
Henry	11,868	11,963	429,370	78,615	30,254	4,735	1,317	9,638
Iroquois	9 881	8,116	445,782	12,348	10,615	87,886	1,650	12,159
Jackson	2,155	2,951	55,212	2,001	50	3,565	738	4,763
Jasper	2,751	3,011	37,278	414	....	2	1,563	9,631
Jefferson	2,611	2 988	52,272	100	10	3,858	633	4,969
Jersey	2,044	2,296	41,021	....	1,221	20,540	264	450
JoDaviess	10,805	10,285	409,420	20,106	8,109	5,790	78	455
Johnson	1,044	1,097	3,665	....	....	....	567	2,237
Kane	26,410	25,473	620,131	226,707	245,530	9,721,942	574	3,843
Kankakee	8,317	8,687	433,967	255,650	72,129	224,695	1,032	7,062
Kendall	7,574	7,685	441,901	43,205	35,106	485,362	351	4,264
Knox	10,332	10,889	333,761	114,228	32,340	119,090	1,073	7,661
Lake	......	8,560	582,238	92,550	100	888,195	....	......
LaSalle	14,983	14,525	611,019	975	3,454	342,351	1,517	17,942
Lawrence	2,898	3,003	45,265	....	150	325	797	6,236
Lee	......	13,300	990,000	60,000	75,000	284,000	....	....
Livingston	11,614	11,207	503,235	9,672	4,066	41,798	1,487	5,350
Logan	5,507	5,304	126,538	6,400	485	43,905	2,566	13,898
Macon	5,222	5,060	166,573	200	....	1,626	1,523	7,842
Macoupin	6,914	7,558	123,576	910	7,399	372,521	814	3,868
Madison	8,004	9,200	320,200	16,000	40,016	120,000	....	......
Marion	3,956	4,430	80,258	....	1,840	43,927	1,965	11,824
Marshall	3,351	3,253	93,922	12,000	1,459	33,855	434	3,684
Mason	......	......	....	....	....	....	......	......
Massac	1,228	1,208	25,473	95	....	250	250	1,751
McDonough	3,426	3,641	71,708	1,801	988	27	659	2,316
McHenry	25,486	25,739	1,043,561	1,887,282	7,600	6,647,901	675	14,298
McLean	10,649	11,513	380,103	7,380	610	78,012	3,017	30,108
Menard	1,975	2,284	39,672	476	52	11,776	978	18,722
Mercer	7,560	7,551	226,402	5,454	11,473	6,520	793	7,088
Monroe	1,883	1,779	28,693	405	....	14,785	252	722
Montgomery	5,289	6,085	161,916	317	11	14,345	1,430	7,029
Morgan	3,130	2,786	125,200	....	28,268	246,398	614	7,327
Moultrie	3 163	1,960	42,966	....	....	479	441	1,032

Agricultural Statistics 1881 *and* 1882—Continued.

Counties.	DAIRY.						BEES.	HONEY
	Number cows kept, 1882.	Number cows kept, 1881...	Pounds butter sold, 1881	Po'nds che'se sold, 1881....	Gals. cream sold, 1881...	Gallons milk sold, 1881...	Numb'r hives, 1882........	Pounds produced, 1881..
Ogle	14,723	14,494	663,404	17,000	132,478	643,400	366	7,592
Peoria	6,938	7,155	319,068	220,896	11,650	195,693	845	7,193
Perry	193	98	9,600	....	....	....	89	1,175
Piatt	2,568	2,390	72,017	490	241	9,815	1,038	4,819
Pike	3,832	3,788	67,578	....	....	150	784	2,695
Pope	1,233	885	13,328	5	200	578	324	1,951
Pulaski	....	....	....	....	....	....	....	....
Putnam	1,829	1,803	40,825	....	....	75	488	7,337
Randolph	3,504	3,985	80,079	5,221	....	685	547	1,506
Richland	2,521	2,954	46,309	970	20	5,215	652	2,850
Rock Island	7,315	7,071	229,599	700	10,683	135,874	363	2,865
Saline	1,201	1,182	11,445	....	....	....	754	4,135
Sangamon	7,401	7,620	197,750	250	5,905	215,291	2,041	8,372
Schuyler	4,383	4,614	95,327	155	....	273	789	2,331
Scott	1,613	1,626	41,719	....	....	800	123	452
Shelby	5,469	5,926	130,703	45	4,090	....	2,314	14,720
Stark	3,255	3,375	85,899	500	1,000	36,558	442	3,325
St Clair	5,554	5,720	230,003	21,955	....	40,021	1,241	4,679
Stephenson	13,774	13,718	881,883	3,000	75,694	81,960	952	14,904
Tazewell	5,919	6,150	190,147	56,045	14,210	196,124	985	5,482
Union	1,836	2,007	38,901	1,820	700	13 130	1,662	9,258
Vermilion	6,566	6,592	119,318	12,873	1	467	1,975	8,599
Wabash	1,129	1,249	18,389	....	....	....	611	4,985
Warren	5,604	14,124	113,942	663	4,706	20,592	977	12,496
Washington	3,348	3,578	58,905	195	40	585	896	6,667
Wayne	3,709	4,036	38,156	50	....	5	1,829	11,024
White	2,103	2,241	23,352	300	200	....	1,222	1 393
Whiteside	15,525	14,835	633,792	7,248	130,213	63,017	1,146	16,056
Will	17,706	18,586	894,604	31,300	99,557	1,224,823	415	4,040
Williamson	1,808	1,822	28,419	....	....	....	806	4,547
Winnebago	11,692	11,840	690,620	712,084	64,231	857,859	447	12,220
Woodford	5,648	5,589	150,080	2,205	15	14,008	693	3,065
Total	581,578	625,410	21,579,414	5,837,974	1,380,939	40,153,488	86,633	618,947

Agricultural Statistics, 1881 *and* 1882—Continued.

Counties.	SHEEP AND LAMBS.	SHEEP, ANY AGE, KILLED BY DOGS.		SHEEP, ANY AGE, DIED OF DISEASE.		WOOL.	FAT SHEEP SOLD.	
	Total number May, 1882.	No. 1881.	Total value 1881.	No. 1881.	Total value 1881.	No. lbs. shorn 1881.	No. 1881.	Total gr. wt. 1881.
Adams	20,362	753	$2,443	1,009	$3,123	131,825	4,852	322,462
Alexander	366	94	171	18	30	1,376	113	7,640
Bond	....	120	240	......	......	17,262	987	78,025
Boone	17,260	506	1,408	569	1,481	70,171	1,449	112,525
Brown	12,171	273	948	570	2,055	40,555	2,798	250,813
Bureau	11,642	329	1,650	756	3,539	64,805	2,563	211,889
Calhoun	1,314	81	167	81	220	4,088	101	8,318
Carroll	6,120	68	233	179	583	30,882	604	81,053
Cass	2,406	112	802	207	905	11,696	3,324	378,650
Champaign	23,788	412	1,317	528	3,485	73,331	1,982	198,975
Christian	17,249	477	1,323	1,760	2,624	53,866	2,547	271,295
Clark	7,350	644	1,281	380	922	37,821	1,778	178,129
Clay	11,015	626	4,716	629	3,470	45,819	3,663	265,966
Clinton	8,064	143	376	344	1,100	34,027	1,420	217,700
Coles	12,271	168	554	651	1,540	43,378	3,960	371,880
Cook	4,268	315	1,129	33	116	16,188	353	23,180
Crawford	14,366	262	1,180	596	1,729	44,074	1,965	215,058
Cumberland	5,906	226	531	240	568	17,547	627	63,258
DeKalb	16,677	202	598	839	2,725	68,436	2,506	224,090
DeWitt	18,028	454	1,377	1,344	2,931	69,611	1,996	189,075
Douglas	6,795	90	314	234	587	28,425	1,677	175,300
DuPage	11,137	60	244	163	600	58,389	2,283	237,460
Edgar	20,670	456	1,830	838	2,194	86,208	6,089	602,040
Edwards	12,280	189	745	517	1,529	44,634	1,731	132,703
Effingham	8,771	345	882	375	890	24,942	594	52,830
Fayette	11,898	438	1,119	887	2,039	15,366	3,174	269,855
Ford	13,740	63	254	84	247	16,808	1,081	121,535
Franklin	......	......	......	......	......	......	......	......
Fulton	27,702	439	1,601	1,405	3,468	127,411	5,196	520,564
Gallatin	6,320	347	566	104	127	9,726	448	27,935
Greene	12,621	637	2,563	895	3,211	63,480	4,062	395,387
Grundy	2,874	59	163	56	232	11,706	555	36,306
Hamilton	8,801	469	1,046	1,008	1,623	29,760	2,736	245,110
Hancock	7,507	409	1,174	501	1,754	25,571	1,715	102,679
Hardin	1,901	94	204	118	223	4,231	763	40,850
Henderson	3,896	74	353	113	415	11,679	341	44,790
Henry	7,406	150	836	210	961	41,843	1,029	109,762
Iroquois	6,206	191	620	448	1,228	26,031	1,017	110,490
Jackson	3,722	267	621	283	543	13,413	1,811	99,875
Jasper	10,902	490	1,080	420	1,034	34,156	2,213	115,950
Jefferson	9,655	874	1,237	259	564	31,718	3,587	409,992
Jersey	7,934	713	1,000	778	6,721	31,383	1,083	70,268
JoDaviess	12,717	343	1,246	398	1,287	53,770	2,252	235,593
Johnson	4,167	193	393	213	568	10,712	524	53,950
Kane	11,960	208	684	491	8,342	59,730	3,514	417,123
Kankakee	4,996	71	306	111	415	17,265	747	20,451
Kendall	10,367	316	1,102	330	1,569	48,966	1,704	168,186
Knox	22,653	447	1,645	1,514	4,148	97,474	4,837	433,023
Lake	......	389	858	......	......	27,745	6,876	522,007
LaSalle	21,759	443	2,123	2,879	3,064	86,576	8,180	353,017
Lawrence	8,323	218	748	374	1,001	33,549	2,005	187,871
Lee	......	200	600	......	......	35,000	900	81,000
Livingston	9,698	129	731	353	1,502	31,058	1,430	145,845
Logan	14,586	129	521	1,145	3,169	48,454	3,472	286,830
Macon	14,635	238	845	664	2,065	66,813	3,503	315,070
Macoupin	30,283	1,069	3,553	2,350	7,735	128,700	4,625	440,112
Madison	9,508	1,130	3,390	340	920	57,048	1,540	154,000
Marion	12,012	641	1,784	576	1,369	46,641	4,371	330,743
Marshall	8,567	166	661	216	883	42,627	1,144	119,531
Mason	......	......	......	......	......	......	......	......
Massac	1,483	51	167	108	488	2,572	547	32,330
McDonough	7,392	201	543	380	632	29.649	1,607	128,230
McHenry	57,603	585	1,965	3,007	8,304	229,332	5,850	535,017
McLean	39,244	759	2,648	1,882	6,779	160,436	4,572	515,214
Menard	6,836	208	960	852	1,604	22,856	2,113	191,500
Mercer	8,047	236	920	504	1,402	40,810	966	105,761
Monroe	1,636	61	183	91	170	5,997	276	19,938
Montgomery	21,199	1,238	3,873	950	2,249	77,982	3,717	334,620
Morgan	13,589	454	1,641	666	1,880	63,250	3,000	285,360
Moultrie	5,231	145	618	192	516	25,976	1,202	115,065
Ogle	11,216	157	638	345	1,052	59,224	1,210	100,210

Agricultural Statistics, 1881 *and* 1882—Continued.

Counties.	SHEEP AND LAMBS.	SHEEP, ANY AGE, KILLED BY DOGS.		SHEEP, ANY AGE, DIED OF DISEASE.		WOOL.	FAT SHEEP SOLD.	
	Total number May, 1882.	No. 1881.	Total value 1881.	No. 1881.	Total value 1881.	No. lbs. shorn 1881.	No. 1881.	Total gr. wt. 1881.
Peoria	14,319	294	1,221	302	1,284	50,678	2,407	183,508
Perry	605	79	153	30	100	2,032	154	15,900
Piatt	3,686	73	313	208	585	17,047	843	80,966
Pike	13 362	617	1,733	864	1,855	59,581	1,208	118,925
Pope	6,426	224	575	331	887	16,854	1,114	121,310
Pulaski	....	....	....	....	....	....	....	....
Putnam	3,297	155	660	187	687	16,975	442	42,803
Randolph	10,303	470	1,460	554	1,826	47,928	3,912	361,925
Richland	11,819	245	733	233	791	35,077	1,040	95,642
Rock Island	4,671	164	431	125	461	21,304	850	81,506
Saline	8,401	219	500	351	858	20,292	1,367	129,275
Sangamon	31,928	902	4,521	3,234	8,967	156,646	10,386	958,276
Schuyler	8,338	295	653	365	1,063	30,485	1,283	128,677
Scott	7,022	292	966	442	1,169	36,125	1,578	157,565
Shelby	23,644	657	1,987	976	2,561	84,230	2,571	254,848
Stark	9,202	199	1,021	514	1,765	44,318	1,511	164,191
St. Clair	6,548	117	458	267	881	25,731	1,803	162,940
Stephenson	14,670	383	2,157	956	4,063	88,229	3,398	269,886
Tazewell	16,570	289	543	934	2,044	69,419	2,781	237,590
Union	5,277	266	747	233	492	11,462	692	97,065
Vermilion	39,136	730	2,148	1,822	2,938	159,514	4,911	466,579
Wabash	6,238	110	457	244	738	23,335	1,407	137,757
Warren	12,321	254	1,035	451	1,809	50,918	1,565	159,842
Washington	5,288	360	961	279	862	18,682	1,365	90,975
Wayne	16,719	431	1,053	816	2,151	80,855	3,098	271,712
White	7,323	307	810	249	568	23,997	1,327	97,145
Whiteside	6,814	185	428	331	902	33,701	1,307	127,455
Will	7,908	135	664	301	999	32,966	2,051	81,545
Williamson	8,894	270	593	351	714	16,433	3,648	281,054
Winnebago	19,948	420	1,135	1,031	3,137	86,496	2,873	250,859
Woodford	6,488	168	660	252	908	21,611	793	78,227
Total	1,110,323	32,914	$107,018	58,583	$174,764	4,636,711	218,142	19,925,207

Agricultural Statistics, 1881—Continued.

Counties.	HOGS AND PIGS.	FAT HOGS SOLD.		HOGS AND PIGS DIED OF CHOLERA.		HOGS DIED OF DISEASE OTHER THAN CHOLERA.	
	Total number 1882.	Number 1881.	Total Gross Wt. 1881.	No. 1881	Total Gr. Wt. 1881.	No. 1881.	Total Gr. Wt. 1881.
Adams	80,708	59,563	12,604,548	14,063	937,326	2,345	57,983
Alexander	2,530	879	116,770	1,245	58,655	50	3,000
Bond	....	4,893	890,715	147	8,400	....	....
Boone	29,363	23,260	6,847,804	413	29,412	496	59,600
Brown	22,990	17,901	4,568,463	2,497	163,830	352	27,625
Bureau	82,709	65,397	19,147,386	7,465	763,782	2,478	349,552
Calhoun	9,096	3,617	789,926	796	50,035	440	22,995
Carroll	57,747	30,017	7,439,061	3,388	662,082	1,309	106,268
Cass	16,067	15,449	5,096,015	3,779	365,910	3,077	41,419
Champaign	76,194	61,891	13,659,296	3,348	271,384	2,286	186,590
Christian	57,623	48,170	10,833,962	8,695	704,375	780	72,997
Clark	13,623	8,426	1,754,130	4,351	271,588	396	21,470
Clay	6,800	2,947	342,365	1,868	113,307	1,205	61,589
Clinton	13,601	9,363	1,114,844	1,062	60,495	741	58,405
Coles	27,973	25,773	6,510,896	5,681	377,040	796	18,095
Cook	18,069	13,185	2,710,957	215	15,875	342	29,185
Crawford	9,470	10,734	1,868,282	3,925	232,880	268	16,348
Cumberland	9,256	6,245	1,216,471	2,176	139,655	419	23,904
DeKalb	75,349	56,790	15,142,382	2,376	273,441	1,916	222,213
DeWitt	40,589	29,119	7,402,371	4,962	419,288	1,082	60,695
Douglas	17,145	20,365	4,654,717	6,378	397,093	121	15,006
DuPage	18,263	19,148	4,797,252	284	19,108	843	82,995
Edgar	37,085	29,262	6,489,449	5,621	441,563	1,056	43,381
Edwards	7,819	2,375	485,165	3,196	148,432	169	9,780
Effingham	11,370	4,443	859,476	2,994	202,897	643	39,543
Fayette	11,907	6,510	1,051,235	3,380	192,113	1,606	56,915
Ford	21,070	22,141	5,222,320	1,106	100,004	416	25,125
Franklin	....	....	....	....	....	....	....
Fulton	95,882	67,042	17,864,559	13,767	766,946	3,886	159,096
Gallatin	9,499	3,134	552,960	722	39,575	9	260
Greene	33,143	27,635	6,053,370	4,877	350,036	591	39,107
Grundy	13,302	16,318	4,198,182	5,224	466,741	407	39,610
Hamilton	7,398	1,452	197,195	6,014	343,575	1,325	60,405
Hancock	57,015	51,221	12,844,445	8,281	638,156	1,266	93,728
Hardin	2,735	1,374	288,530	1,498	87,305	174	13,270
Henderson	31,471	24,364	6,814,537	5,054	328,065	727	58,900
Henry	101,547	69,037	20,454,581	4,739	563,403	3,680	333,203
Iroquois	48,797	53,686	14,314,346	2,251	218,431	1,683	139,363
Jackson	8,546	2,201	395,584	3,897	248,085	1,903	128,349
Jasper	9,464	5,278	903,983	3,368	196,116	2,816	133,045
Jefferson	8,774	5,164	511,236	3,728	172,278	635	40,395
Jersey	23,616	15,309	3,819,571	1,768	196,198	1,224	77,015
JoDaviess	49,715	34,457	9,305,440	4,547	419,528	1,031	96,635
Johnson	5,345	2,389	363,004	1,288	93,745	528	31,295
Kane	31,566	26,636	6,442,592	3,972	241,192	830	57,576
Kankakee	28,313	26,195	4,889,210	4,800	376,305	495	40,450
Kendall	31,599	27,163	7,091,194	3,147	270,675	369	38,140
Knox	88,638	60,016	16,192,965	9,872	748,691	940	98,902
Lake	....	15,173	3,694,095	227	16,270	....	....
LaSalle	86,053	64,781	17,918,039	4,593	336,304	2,209	207,530
Lawrence	9,177	4,613	611,592	4,933	301,302	733	35,223
Lee	....	25,000	6,700,000	2,000	350,000	....	....
Livingston	103,013	68,298	17,992,870	1,699	148,732	3,864	361,869
Logan	64,720	48,079	11,443,394	6,519	514,718	1,959	82,295
Macon	58,198	45,502	11,116,496	4,546	386,103	973	79,979
Macoupin	55,600	40,009	8,313,251	11,837	963,491	1,374	94,305
Madison	33,078	16,539	3,307,890	....	....	....	....
Marion	9,783	7,545	1,285,741	2,062	137,104	2,173	108,864
Marshall	32,960	21,648	6,383,425	1,190	80,810	1,008	70,536
Mason	....	....	....	....	....	....	....
Massac	3,831	1,002	143,648	2,134	88,420	491	25,525
McDonough	32,146	27,720	6,375,262	5,217	322,663	190	15,978
McHenry	39,738	34,921	9,531,518	617	62,812	915	78,219
McLean	116,150	91,947	23,353,538	6,679	527,180	2,526	208,339
Menard	20,666	15,152	3,788,112	5,149	257,693	472	82,600
Mercer	62,725	43,667	11,359,473	15,069	1,157,248	888	72,215
Monroe	8,196	1,481	289,553	575	44,659	442	28,980
Montgomery	30,003	24,067	4,771,407	14,077	1,037,182	1,054	69,165
Morgan	35,221	28,643	7,160,720	6,246	499,680	....	....
Moultrie	18,431	14,523	2,660,252	2,275	159,660	289	16,610
Ogle	61,047	44,545	12,112,142	1,700	160,407	1,317	111,758

Agricultural Statistics, 1881—Continued.

Counties.	Hogs and Pigs.	Fat Hogs sold.		Hogs and Pigs Died of Cholera.		Hogs Died of Disease Other than Cholera.	
	Total number 1882.	Number 1881.	Total Gross Wt. 1881.	No. 1881.	Total Gr. Wt. 1881.	No. 1881.	Total Gr. Wt. 1881.
Peoria	74,353	42,708	12,550,904	5,501	362,825	581	58,599
Perry	3,060	1,908	301,921	192	7,650	14	11,000
Piatt	29,901	22,929	5,020,998	4,120	419,705	700	56,850
Pike	38,424	28,689	7,281,309	4,654	283,948	680	46,493
Pope	6,215	1,768	317,265	1,582	115,185	946	60,148
Pulaski	....	....	....	....	....	....	....
Putnam	16,016	7,884	2,730,032	1,007	86,440	394	34,091
Randolph	12,817	2,949	535,990	2,149	157,463	501	81,291
Richland	7,462	1,862	248,526	1,910	118,098	568	36,008
Rock Island	41,577	27,986	7,687,014	4,735	356,951	1,021	22,271
Saline	16,355	1,631	638,210	2,795	181,480	394	47,963
Sangamon	66,898	72,628	16,652,663	22,085	1,912,900	487	64,035
Schuyler	33,463	21,446	5,572,287	2,295	190,110	806	116,595
Scott	23,371	15,139	3,618,636	1,143	108,945	172	14,400
Shelby	40,086	32,791	7,403,338	10,557	795,217	1,420	249,776
Stark	48,795	29,622	9,482,802	1,188	118,225	419	53,175
St. Clair	20,377	4,262	987,400	712	55,535	802	70,275
Stephenson	76,963	42,509	10,995,085	2,589	152,428	1,783	152,705
Tazewell	51,327	33,501	8,966,810	6,778	461,747	620	57,010
Union	10,738	2,420	439,709	4,486	341,773	741	101,318
Vermilion	53,537	50,729	12,013,404	5,647	441,960	1,578	118,922
Wabash	8,396	3,895	754,728	2,660	121,701	429	23,500
Warren	77,442	55,729	15,125,299	15,760	1,220,600	1,716	192,915*
Washington	8,761	2,330	491,565	3,304	227,875	142	6,390
Wayne	10,726	2,925	429,024	5,952	346,511	2,135	95,805
White	12,611	12,506	976,650	6,347	333,325	635	41,408
Whiteside	52,435	39,308	10,623,504	1,906	151,165	2,387	223,984
Will	30,413	33,526	7,914,957	2,788	256,543	594	58,730
Williamson	8,191	2,113	320,943	3,656	280,605	687	63,660
Winnebago	40,429	32,879	11,409,142	693	60,547	676	79,451
Woodford	53,244	35,462	9,487,655	1,772	116,940	2,580	185,134
Total	3,315,900	2,468,833	618,393,680	418,502	31,522,141	98,736	7,325,310

Agricultural Statistics 1881—Continued.

Counties.	TIMOTHY SEED.	CLOVER SEED.	HUNGARIAN & MILLET SEED.	GRAPES.	DRAIN TILE.
	Bushels produced. 1881.	Bushels produced. 1881.	Bushels produced 1881.	Pounds produced. 1881.	Number of feet laid in 1881.
Adams	1,188	4,355	10	16,700	3,615
Alexander	...	...	...	...	...
Bond	...	...	...	...	...
Boone	4,967	2,541	632	100	5,250
Brown	349	2,327	...	1,015	43,537
Bureau	6,267	1,039	115	3,290	536,615
Calhoun	...	15	...	14,000	1,700
Carroll	2,054	3,547	587	4,111	...
Cass	5	...	240	4,634	52,260
Champaign	6,615	810	367	26,827	2,142,606
Christian	2,384	42	1	8,970	314,051
Clark	714	220	...	4,147	5,130
Clay	4,909	...	...	410	6,500
Clinton	81	9	21	7,170	...
Coles	1,129	368	231	4,746	666,282
Cook	1,694	125	4,649	24,800	43,650
Crawford	491	111	...	220	4,457
Cumberland	2,743	20	...	2,347	37,744
DeKalb	30,186	3,310	1,293	50	530,467
DeWitt	1,249	277	125	13,230	999,534
Douglas	4,580	573	3,260	17,199	278,820
DuPage	1,460	858	1,338	7,404	265,792
Edgar	4,780	372	219	5,226	1,979,885
Edwards	32	262	...	220	637
Effingham	1,149	...	71	2,431	50
Fayette	628	48	...	780	175
Ford	9,708	45	6,043	3,750	513,641
Franklin	...	...	...	...	...
Fulton	2,713	15,149	195	15,747	403,639
Gallatin	...	82	...	...	...
Greene	148	1,040	...	9,635	54,331
Grundy	10,813	66	2,090	2,650	364,641
Hamilton	10	...	...	70	...
Hancock	2.868	2,196	40	133,289	33,604
Hardin	8	...	...	...	...
Henderson	252	116	...	11,495	46,567
Henry	1,456	1,097	512	6,860	485,304
Iroquois	17,450	470	12,951	26,141	294,455
Jackson	12	463	4	3,400	200
Jasper	3,272	12	38	1,172	229,500
Jefferson	149	5	4	10,875	350
Jersey	364	730	...	14,138	25,551
Jo Daviess	3,107	1,998	60	5,565	1,570
Johnson	...	220	...	...	...
Kane	9,487	1,190	726	25	206,970
Kankakee	11,788	2,064	5,562	5,470	31,011
Kendall	19,302	1,660	504	...	604,652
Knox	3,071	1,676	215	6,259	635,305
Lake	1,816	1,989	3,241	12,810	...
LaSalle	28,328	1,310	844	10,790	1,263,819
Lawrence	475	583	90	1,935	260
Lee	41,000	9,000	280	80,000	2,170
Livingston	38,212	656	8,699	16,827	863,522
Logan	702	75	...	46,280	888,992
Macon	1,902	911	370	30,830	462,157
Macoupin	1,741	1,928	13	3,885	83,435
Madison	...	...	...	...	...
Marion	10,234	35	50	800	...
Marshall	1,463	810	248	1,300	504,349
Mason	...	...	...	...	...
Massac	1	23	...	...	...
McDonough	1,294	1,586	...	1,160	89,894
McHenry	6,120	4,895	1,411	6,995	5,337
McLean	6,901	2,744	326	9,220	2,261,328
Menard	244	53	275	76,480	115,958
Mercer	3,440	618	90	49,905	288,460
Monroe	4	355	...	6,200	437
Montgomery	2,226	88	9	1,225	50,470
Morgan	1,563	164	...	18,149	100,320
Moultrie	652	229	293	200	225,106
Ogle	24,222	5,505	1,241	4,617	43,746

Agricultural Statistics 1881—Continued.

Counties.	TIMOTHY SEED.	CLOVER SEED.	HUNGARIAN & MILLET SEED.	GRAPES.	DRAIN TILE.
	Bushels produced. 1881.	Bushels produced. 1881.	Bushels produced. 1881.	Pounds produced. 1881.	Number of feet laid in 1881.
Peoria	1,745	4,068	10	18,995	951,969
Perry	5	....	....	....	....
Piatt	1,560	1,676	182	19,665	1,430,238
Pike	234	731	2	1,453	4,540
Pope	2	22	....	877	....
Pulaski	....	....	....	....	....
Putnam	658	339	....	400	223,994
Randolph	25	397	....	6,978	900
Richland	10,671	150	....	4	964
Rock Island	304	204	40	113,521	41,124
Saline	....	....	....	....	....
Sangamon	6,490	5	203	12,618	363,676
Schuyler	2,595	8,655	37	3,917	61,292
Scott	138	60	....	1,108	25,612
Shelby	1,589	52	1,180	5,405	16,732
Stark	1,012	109	25	3,420	638,313
St. Clair	....	517	....	37,220	58,445
Stephenson	2,185	3,931	296	4,710	600
Tazewell	1,353	2,303	116	3,700	978,039
Union	10	460	25	700	100
Vermilion	4,092	138	825	24,182	1,060,299
Wabash	524	1,411	....	775	185,847
Warren	584	338	17	18,835	220,995
Washington	280	12	28	2,537	3,270
Wayne	23,623	55	....	271	90
White	599	1,171	1	130	113,609
Whiteside	4,434	2,310	689	6,750	6,996
Will	7,506	3,967	11,304	10,415	1,039,605
Williamson	14	482	....	400	....
Winnebago	1,277	2,153	1,206	2,000	883
Woodford	4,856	4,311	417	8,840	881,355
Total	426,531	125,042	76,189	1,115,902	27,409,295

APPENDIX.

FOURTH ANNUAL REPORT

OF THE

Botanist of the Illinois State Board of Agriculture.

By Prof. T. J. Burrill.

FUNGI AND DISEASE OF PLANTS.

There are very few of our flowering plants, whether native or introduced, growing wild or cultivated, which are not known to support one or more species of vegetable parasites. All of the "rusts," "smuts," "mildews," and many other affections of the leaves, stems, flowers or fruit, known by other names, are found to be peculiarly associated with true growths of, for each case, special kinds of minute vegetation. Though only seen, except as a mass, by the aid of the compound microscope, these growths are the product of real species of plants, having all the characteristics of form, life and reproduction possessed by the better known species of the higher members of the vegetable kingdom. Their minuteness does not prevent existence nor real specific distinction. Small as these microscopic fungi are, they are just as subject to classification into orders, genera and species, as the trees of the forest. To him who has carefully studied these minute forms, a certain kind of rust, on wheat straw, is as characteristically recognizable as is the wheat species itself to the agriculturist. The botanist names and classifies the species which are only revealed to him by the microscope, in the same way, and with the same basis of specific distinction among the kinds, as he does those whose various forms make up the conspicuous verdure of the prairie and wood-lands. And what may seem astonishing to many is that the number of thus definitely recognized species among these microscopically small plants is scarcely less, perhaps not less, than the number which otherwise constitute the vegetation of the earth.

The question to be discussed now, is the relation of the minute species belonging to the great group Fungi, to the diseases and injuries of higher plants, especially those we cultivate. When a parasite is spoken of most minds turn at once to the animal species, and some sort of an insect or allied thing is thought of. We, however, may observe that there is no more relation between fungi and insects, than there is between thistledown and birds, if they do resemble each other somewhat in habitat and effect. The plume of a thistle seed passes through the air, so does a bird; but this does not express similarity of origin and life. A fungus is sometimes found on a distorted or injured leaf, and on another similarly affected so far as common observation goes, a colony of plant lice is discovered. Both may be the cause of similar, and perhaps serious injury, but no one argues from this the closeness of their relationship. Plants are as truly parasitic on plants and animals, as are small members of the Zoölogical world on larger ones. For the present we are to do with parasitic plants, and of these only such as belong to the Fungi.

There is now just enough known of these minute living and growing things, to make us aware that the injuries caused by them are very great, but not enough to permit us to say how great the destruction is which can be clearly traced to their effects. The large proportion of even the best informed cultivators know, in a practical sense, really little of the various kinds of fungi affecting crops, and still less of their peculiarities of life, history and development.

Nor is this to be accounted to the discredit of the intelligent and active body of men devoted to horticultural and agricultural pursuits, ordinarily as wide awake and enterprising as the members of any trade or profession, whatever. The fact is, those who have opportunity and means, and who make the matter a special study, get along slowly enough, and are to-day groping in the dark for the factors of many an unsolved problem.

Nothing, we may say, can be done without a compound microscope, and, however much we may admire the skill and ingenuity which have produced so wonderful and perfect an instrument, and how much soever we feel ourselves indebted to it for the knowledge we possess, still it is at best a tedious thing, compared with ordinary vision, to gain information concerning living things through the lenses of a fine and efficient microscope—much more so with a poor instrument. When stock break through the fences into an orchard, when rabbits gnaw the bark, and even when most insects bore the wood, nibble the leaves or sting the fruit, we can see the depredators, and readily observe their methods as well as quickly understand the extent and probable duration of the injury; but in most cases, the presence even of these invisible fungi is not usually suspected until the prized product of our culture is not only damaged, but shows this damage through its decline, and perhaps death. Investigation at this stage may fail entirely to reveal the source of mischief, the mischief-maker having disappeared. It is not, therefore, wonderful that many do not recognize in parasitic fungi serious enemies to the culture of fruit and crops. When they are really known to occur in connection with a disease, we can excuse the doubt so often expressed in regard to their being the cause of the malady, rather than results of other causes. To farther use the illustration already introduced, if a cow steals in through an open gate and in a few minutes reduces a choice evergreen shrub from a thing of beauty to a ragged misshapen object of pity, no one thinks of accusing the gate as the direct agent in the twisting and scarring of the limbs wherever the responsibility of the loss may rest. The condition of the gate allowed the cow to enter, and perhaps better attention to the former rather than shooting the latter may be the proper method of preventing a repetition of the disaster; still all agree it is the animal that does the business, is the immediate and active factor in the case, without which, whatever the opportunities and conditions, the damage would not have been done. It is the animal, therefore, to which we in this instance attribute the mischief, and our methods of protection are based on our knowledge of her habits, propensities and powers. It is in this way that we arrive at the idea and proportions of a fence as a barrier, of the nature and qualities of a gate and its fastenings, and of laws, penalties and pounds.

Now a parasitic fungus, being very low in the scale of existence, is much more subject to the peculiarities of condition than is the illustrative animal; but in a very marked degree, the same ideas and reasonings are as applicable to the one case as to the other. A certain rust or mildew occurs on a crop after a summer shower, and we think we have reason to assert that the rust or mildew would not have appeared had the weather remained dry and clear. Shall we now say that the injury is directly due to the shower? We do not perceive the invasion of the active agent of destruction —indeed, nothing of this kind can be seen with unaided eyes. We only know that in the one case the wheat is killed, in another that the peaches rot while still hanging on the tree--just as a blind man may discover the injury to his favorite fir without at first suspecting his neighbor's cow, or the unlatched gate. If he knew nothing about such a possession by his neighbor, and nothing of the food and habits of the animal, he might not discover at all the real cause of the mischief. Knowing, however, something of these things, he gradually ascertains what the trouble came from, and how it happened, by fumbling over the torn branches, finding on the jagged ends little tufts of hair, by feeling on the ground and recognizing characteristic imprints there, and by following these one by one, by slow and tedious method, to the open gate. To one blessed with eyesight and the requisite knowledge, a glance would have sufficed to comprehend the whole matter. We must, however, in most cases, compare the investigator of parasitic fungi to the blind man, who is otherwise prepared to solve the question presented, and the non-microscopical worker to him who, without eyes, has also no information about such animals. When the microscope even imperperfectly reveals a something as the possible cause of destruction in a direct sense, in the case of the rust or rot, he who would rationally understand the true cause and cure of the malady, will assiduously follow such indications as are presented of the mischief-maker, though, in the following, he is quite blind except as artificially aided, and quite unable to feel. Simple minuteness must not be allowed to shake one's faith in the possibility of effects. The proboscis of a musquito is as effective after its kind as that of the elephant. The shells of organisms too small to be seen without the compound microscope, have added a thousand fold more to the crust of the earth than have the bones of all large animals. It was the little foxes that spoiled the vines, in Solomon's estimation.

After much research, provided with the best instruments of our day, the writer cannot avoid the opinion that parasitic fungi are as truly the real cause of disease and injury in plants, as is the cow in the illustration given. If it is held that special conditions of the plant, or the weather, or both, are required to favor these growths, no negative reply need be given; but not unsimilar conditions exist for the development of all organic things, man himself included. He thrives abundantly in the temperate regions of the earth, providing the soil is good and his enemies not too powerful, while he fails outright in his attempts to even visit the north pole, much more to erect there the capital of a prosperous and home-loving people. Failure after failure sometimes attends, without apparent reason, the endeavors to introduce fruits from one region to others of the same latitude and seemingly similar climate. How often has the European vine been brought to America without successful establishment! On the other hand, a scarcely noticeable plant in its native soil, becomes, in other localities, an obnoxious weed, or a valuable addition to the fields and markets.

Who ever dreamed that our little water-weed *Anacharis canadensis*, inconspicuous in our streams, would become a pest in English rivers?—choking the waters and even impeding navigation! What prophecy announced the wonderful result of the introduction of the potato in Ireland?—the "Irish potato" until this day, though the plant is a native American. The various kinds of fungi form no exception to the general law, that peculiar, sometimes not apparent, conditions specially favor or hinder development; and these favorable conditions for a parasitic fungus may or may not be conducive to the best growth of the parasitized plant. The peculiarities of weather favorable to the growth of maize are not usually well suited for wheat, yet seem to be, in a general way, to the little vegetable growth within the tissues of the wheat, which we call rust. In this case the rust-plant becomes enormously multiplied and seriously destructive, while the results would have been less marked had the wheat itself retained its full vitality and resisting power. We shall make a long step in advance, in the practical study and treatment of the diseases of plants due to fungi, when we thoroughly recognize the fact that the rusts, smuts, mildews, rots, etc., are really vegetable growths—subject to certain conditions, and as dependent on these for abundant development as are the valuable products of our gardens, orchards and fields. There is with the one and with the other, nothing like chance—neither is the growth of fungi so wonderfully sudden and phenomenal as is generally supposed. In many cases, the spores of parasitic fungi constitute relatively the only conspicuous part of the plant, and these are often matured in prodigious numbers in a short time; but this does not necessarily mean that the entire life of the plant is very brief. A mushroom is ordinarily made the type of rapid and short-lived growth, yet the vegetative portion of the plant rather slowly accumulated the reserve material by which this quick apparent growth is made possible. So, smut that fruits only in the ovary of wheat, and seems to come in a day, grows all the season through in the tissues of the stem, preparing for the apparantly sudden development. So, too, a sudden change in the appearance of a parasitized plant may be the result of prolonged disease, just as an impetuous land-slide may owe its origin to the slow undermining of trickling water as well as to an earthquake.

Having gained the idea that the various rots, rusts and blights are the results of specific organic growths, each producing characteristic effects, and limited, like other living things, by external conditions, and each subject to its own peculiarities of life and development, we may next inquire what are some of the facts found to be true of these fungi, as a whole.

ORIGIN AND DEVELOPMENT.

The idea is too common, that mold on moist bread, black, velvety stains on the surface of peaches, etc., may spontaneously occur through some combination of climatic effects, without the necessity of pre-existing germs of each particular kind; but these things no more arise in this manner than a young peach tree starts from a ball of clay peculiarly mixed, or from the seed of an oak. Each fungus produces its own seed-like bodies—"spores," and from these alone is its reproduction possible. One mildew does not change into another one, and none are anywhere developed except as offspring of parents, as among the higher inhabitants of earth.

Where, therefore, the germs of any particular parasitic fungus do not exist, no possible combination of circumstances or of things can cause such fungus to spring up into life and development. Were it not for the existence of the special kind of spores capable of germination, no amount of showery weather would make wheat rust, nor fog and rain cause grapes, peaches and apples to rot. Neither are these spores gifted with any powers of distribution beyond those afforded in the regular order of nature. They are carried by the wind, but cannot float in still air; gravitation as surely brings them to earth, save when opposed by stronger forces, as it does cannon balls or meteorites. As we gain knowledge of the facts and processes of nature, the powers of good or evil genii of the air diminish, and at last their existence is altogether denied. No one now believes that witches, by acts of will, blast the crops or curse the fields. The reign of universal law, affecting alike the minute and the great, the organic and the inorganic, the dead and the living, the nerveless and the sentient, is acknowledged and verified by the science of our day. Things do or do not take place, not according to chance or supernatural power, but according to the regular and orderly procession of natural law, established by Him in whom there is no variableness nor shadow of turning. Every effect has its cause, and we ought never to think any of the causes are past finding out or beyond the comprehension of man. With the knowledge we now have concerning all, including the most obscure and minute of living things, there can be no hesitation on the part of the informed in accepting the present existence of any fungus growth as positive proof of the pre-existence of its special germ, and of the development of that germ under favorable conditions.

Plant diseases occur, as seen in given localities, though the soil, climate and cultivation of crops are as nearly as possible as they have been for years. It is only recently that one of the mildews on American grapes appeared in Europe, though it is already widely spread on the continent, and is the cause of much alarm. The conditions of weather and of the vine have for generations been as favorable for the growth of this mildew as they are now. Only one element has been wanting—the spores. The latter have finally crossed the ocean, in some way carried by man, and now the rapid development proves the suitableness of the conditions for growth, but their inadequacy for original production. In the same way the black rot of American grapes can be traced to Europe, and the same lessons arrived at.

A few years since, a parasitic fungus, previously known in South America, gained introduction to Southern Europe, and gradually spread over the continent, carrying destruction to the hollyhock as it went. Reaching England, its ravages were especially marked, for considerable attention is given the popular flowering plant. The hollyhock is closely allied to the cotton plant, and as the same fungous species sometimes grows on botanically related host plants, there was cause for considerable apprehension, lest the parasite should be again brought across the Atlantic, and cause serious trouble to our sisterhood of Southern States. The watery barrier was actually passed, but fortunately the cotton plant did not prove susceptible to its withering effects.

The primitive origin of these species of fungi, we will not discuss. They, in some way, at some time, came into existence, and in the same manner that other species of living beings, not excluding man, were originally produced. Evolution has been studied, and in its light species are said to be transformations of previously existing species; but this does not, in any practical sense, affect the foregoing, because the process is reckoned by centuries and eons, not by years or the generations of man. It is possible that change of habit sometimes occurs to such an extent that a fungus species, not formerly capable of growing on a certain host species, becomes adapted to the latter; but nothing of this kind has been definitely observed. There is, however, the widest variation among the species of parasitic fungi as to the limits of their restriction to certain host plants. Many are found only on one species; very few (except such as have a peculiar alternation of habitat, after the many of many animal parasites), grow on plants belonging to different botanical families. Yet a few affect many species of flowering plants, even sometimes those belonging to quite diverse orders. In the latter cases there is usually more or less difference in the vigor and appearance of the fungus on the different hosts; so that it is not easy to decide from form and appearance alone whether a certain parasite on a certain nourishing plant is, or is not, a distinct species, or is a modified form of something known elsewhere. Artificial cultures made by transferring the spores from plant to plant and watching the development are the only criteria when such doubts occur; this is entirely feasible though it requires much care and skill to secure reliable results. The so-called black rot of grapes is caused by a minute fungous parasite of low and simple organization, affecting the young stems and leaves (petioles and veins) as well as the fruit. There is also a disease on the canes and leaves (petioles and veins) of black-cap raspberries and blackberries caused by a little fungus so similar in every way, as seen under the microscope, that one is inclined to pronounce them identical; but cultures prove them distinct—a point of much practical importance.

GERMINATION AND PENETRATION.

The next thing deemed of most importance, is to fully comprehend that these parasites always germinate outside the plant tissues, and gain entrance, if at all, only by mechanically penetrating the epidermis, or other surface coat. An unsubstantiated opinion too commonly prevails that in some way the spores may be taken up by the roots with water, and carried with the latter to any part of the plant. This assumption is founded on a misconception of the manner that plants take water from the soil, and of the way it traverses the plant tissues. It is true there are in most plants, elongated ducts, or tube-like vessels, the open cavity of which is sometimes large enough to be seen in cross section by the unaided eye, and large enough to permit the passage of fungus spores. But these vessels cannot, in any just sense, be compared with the arteries and veins of animals. The truth is, when there is any considerable movement of the watery fluids in plants, these ducts are always filled with air, not with liquid material. If a sapling in full leaf and consequently in its most active state as to the ascent of water to supply the marvellous amount transpired, is cut and a portion of the stem thrown into water, the latter will be sucked into the tissues to the amount of ten to twenty per cent. of the weight of the green stem, clearly showing that the wood was not previously full. Other experiments and investigations prove that the water normally ascends (and descends) through the substance of the cell walls themselves, not through the cell cavities. Now no one is able to see with the best microscope ever made, the inter molecular spaces in these cell walls; though water, itself made up of solid molecules, passes through them to gain entrance in the first place to the roots and through the millions of them to reach the upper portions of the plant. No fungous spore can pass such filtering. The methods practiced by chemists of freeing liquids from solid particles are coarse and sorely inadequate compared with that in operation in plants. It is absolutely impossible for any solid body large enough to be seen at all by the highest microscopic powers in existence, to pass through one such cell wall, much less through the unnumbered myriads composing the tissues of any cultivated plant. As spores of fungi are rarely less than one five-thousandth of an inch in diameter, while a body less than one hundred-thousandth of an inch can be seen and studied, and as the molecular openings through which the water passes are still less, probably very much less, we may be certain that such spores are effectually excluded from the circulation in the plant tissues. Direct examination also proves that the entrance of the fungus is effected by piercing the surface, the germinal tube accomplishing this by its power of absorbing the substance at the immediate point of contact, or by reaching and passing through a stomate. A thick epidermis is often a complete safeguard against the former method, this covering alone being sufficient to account for the immunity of certain varieties from certain diseases which so nearly exterminate others. It is scarcely possible that any parasitic fungus is able to make its way through the corky envelope of trunks, etc., which we call bark, so long as the latter is free from cracks or wounds.

It must be remembered that, to exist, a fungus is as dependent on an organized structure as are other plants and animals. It is not possible that this solid structure can be dissolved and life continue; it is not possible that a fungous spore can be liquified, absorbed, and then re-organized. As well might a criminal think of reducing his body, by some chemical process, to a liquid form, in order to pass through the merciless grating of his cell window, and hope to live afterwards as a man.

As a practical demonstration of the non-absorption and non-circulation of fungous spores in the tissues of plants, nothing can be more satisfactory than the results as known of putting bunches of grapes in paper sacks, to prevent the rot so prevalent in our country. These diseases—for there are several of them—are perfectly prevented by excluding the spores of the fungi, which produce them, from the fruit itself, though the rest of the vine is not protected. As a matter of fact, other parts of the vine are parasitized by the same depredators, and are sometimes seriously injured, though the apparent effect is necessarily different from what it is in the pulp of the fruit. In these cases, and in most cases, the mycelium, or root-like portions of fungi, spreads but little from the first point of entrance, not more than a few hundredths of an inch in the stem and leaves—to a greater distance in the fruit. But a limited number of species uniformly send their mycelium very widely through the affected plant. Smut of wheat shows itself only in the head, but the fungus starts in the germinating plantlet, and traverses the entire straw.

The conditions of germination are also important elements in a study of plant diseases due to fungi. The spores are very simple in structure: each consists of a single cell formed of an inclosed mass of plastic substance (protoplasm), around which are two coats, the inner thin and flexible, the outer usually thicker and much less elastic. In germination, the outer is pierced or cracked, and the inner coat protrudes as a long tube, containing still the soft internal substance. This tube is that which penetrates the plant, becoming perhaps a hundred times as long as the original spore before gaining access to the hypodermal tissues. A proper temperature, varying with the species, is essential for this process; but still more marked are the conditions respecting water. A fungous spore can no more germinate without moisture, than can a seed of a flowering plant, though neither requires to be immersed in water. Damp air, such especially as we have during fogs, favors the germination and penetration of fungi. Sometimes these processes take place in leaves and fruit, when more or less covered with little drops of dew. In bagging grapes, should any of the rot spores be included, it is not probable that they would germinate, on account of the want of water, and this is the secret of grapes so often escaping this disease when the vines are protected by being trained under the eaves of a building or similar shelter. This influence of water upon germination is one of the important reasons why most parasitic fungi make worse depredations during wet than during dry weather. In most cases the spores are, however, more readily and widely diffused when dry.

Kind of Injury.

The diseases caused by fungi present many peculiarities, according to the species of parasite or host. Sometimes the latter is simply enfeebled, grows slowly and slenderly as from want of sufficient nourishment, which doubtless is the fact, because robbed. On the other hand, the infested parts sometimes take on abnormal shape or size, the cells of the tissue swell to many times their proper dimensions, or become excessively multiplied, or excessively filled with nutrient material. Their usual functions are impaired or diverted, and curious transformations and deformities occur. Not infrequently the abnormal growth, though very different from the healthy structure, is just as regular and characteristic, so that one who becomes acquainted with the peculiar development may be able to tell at once what species of parasite produced the odd cell-formation without seeing the fungus,—just as certain galls on plants point unmistakably to the species of insect which caused them.

This or these modifications of growth seem to be quite as injurious, in many instances, as the actual robbery of nourishment first mentioned; stems are swollen and knotted, leaves curled and distorted, fruit made unsightly and worthless. But the worst effect of fungi is the more or less immediate death of the invaded cells. In well known instances this takes place as regularly as the foregoing; certain destruction following the penetration of the mycelium, and affecting the rest of the plant or not, according to the location of the injury—if on the foot-stalk of a leaf, that leaf perishing; if at the base of the stem, the whole plant succumbing. Some fungi appear to be so caustic in their effects that by merely creeping over the surface, sending down here and there however little branchlets which, without entering the epidermis, become closely applied and act as suckers, the tissues are destroyed.

Remedies.

It will be seen from the foregoing that there is much diversity in the physiology of fungi. A full account of the differences known in structure and habit, would require a much fuller presentation of the subject than is possible here; but enough has been said to indicate at least that there can be no one method of fighting these invisible foes. The unfortunate thing really is, that with all our knowledge there is yet so little of practical value in the way of remedies of any kind. We can at least, however, understand many things which need not be done, and so save unnecessary expense and labor, just as the study of entomology saves men from stringing sweetened cobs together and hanging them on trees to catch curculios. It is whimsical and futile to attempt any kind of medication of a tree by incorporating materials in the soil about the roots. Such applied substances, unless indeed directly useful to the plant as food, will not be absorbed to any considerable extent as a general thing, and it may be safely said that no fungous parasite can be banished, or even kept out, by the presence in the tissues of any chemical substance so absorbed and acting as a medicine. And the same may be said of any attempt at medication by directly introducing, by bored holes, etc., any substance whatever. The driving of nails, etc., into trees for any such purposes is an admittance of ignorance, or it is quackery. In all this I do, by no means, assert that food elements in certain cases cannot be added to the soil, which may prevent or reduce the ravages of fungi; but, if so, these substances must be such as act by giving special thrift and quality of growth, rather than as medicines.

We may understand, too, that nothing can be accomplished out of doors by fumigations, or loading the air with strong odors. The impossibility of retaining even sulphur fumes sufficiently concentrated in the open air about plants to kill them, should teach us that we cannot thus destroy an organism having so little dependence of fresh and pure air as a fungus. It is emphatically the exception, not the rule, that under suitable cover any such method of doctoring these diseases can be practiced with profit. How hopeless, then, the case out of doors. So, too, it is usually useless to apply powdered substances to the affected plants in the hope of ridding them of these parasites. There are still those who from pretended knowledge, advise in books and papers, the application of flowers of sulphur to grape vines in our country, to prevent or cure the mildew or rot. How many tons of sulphur have thus been wasted! There is, indeed, one species of fungus (Uncinula), sometimes found on American vines, which can be reduced in this manner; but it, at least in the West, is of little moment compared with any one of three others that is not in the least inconvenienced by sulphur as applied.

In Europe, this sulphuring has been found of much benefit; but against the recently introduced American mildew (Peronospora) they have already discovered the antidote ineffectual. It is surely time that we should begin to understand that a successful remedy for one thing in Europe, may not prove useful for another thing in the United States.

The application of washes containing ingredients inimical to fungi, has in some cases more effect, and when the special work to be done is understood, positive progress may be made. But even in these, too much reliance must not be placed in general use. Such washes are usually only applicable to the trunk and larger limbs of trees, and owing to the increase in diameter of these parts by growth, cracks soon appear in any non-elastic coating, rendering exposure nearly as great as before.

Without further criticising such methods of prevention or cure, it may be stated that something can still be offered for special cases; the prescriptions cannot be made general. In the first place, much in the way of prevention can be accomplished, has already been accomplished, by selecting varieties for culture which are not liable to the despoilations of injurious fungi. The orange-colored rust (on the leaves) of the blackberry is very destructive to the Kittatinny, but does not appear on the Snyder. The White Doyenné pear is very often caused to crack and become worthless by a fungus

(Fusicladium), which often grows, to some extent, on certain other varieties, without injuring the fruit in the least. Such illustrations are very numerous, and when observers more fully learn to discriminate different diseases, they will rapidly increase. Season of growth, soil and methods of cultivation and fertilization may be usefully studied for the purposes in view. It is not always the least vigorous plants, as so often asserted, that are most liable to rust, mildew, etc. Sometimes it is directly the opposite, as in the case of wheat grown on too rich land. Certainly we must not suppose the plants need be in thriftless condition before fungi can grow upon or within them. There is simply some condition more favorable than others for the injurious development of the parasite. This special condition it is our business, as skillful cultivators, to find out.

There are some special methods of treatment, too, by which success may be gained. One kind of wheat smut (Tilletia) can be effectually prevented by washing the seed with a solution of copper sulphate (blue vitriol), but this treatment for the rust on the straw is like smoking cigars to cure corns on the feet. This rust has nothing to do with the seed, but comes from spores passing the winter in the field. Bagging grape clusters and growing the vines under shelter has already been referred to. Washing the trunks of apple and pear trees with strong alkaline solutions, makes the bark smooth, and much less liable to injury by what is improperly called "sun scald." The bark, after such washing, is a more certain barrier to living enemies, because more elastic and less liable to crack by the expansion of growth and the alternations of temperature.

Something can be done by directly preventing the development and dissemination of the spores. In numerous cases the winter is passed only by spores on or within dead leaves. Careful destruction of these may assuredly be helpful. If one has an isolated vineyard, he may do much toward freeing his vines from fungous depredations by burning affected fruit and leaves as found, and by pruning just before the leaves fall and burning all the refuse. This has been practically tried with good results in the cases of the black and the gray rots, but it takes labor and eternal vigilance. Knowing just how, when and where to strike is important in any warfare, and advantages can frequently be taken in the kind of struggle in question. In some localities apple trees, especially certain kinds, are badly afflicted with a fungus on the leaves and fruit, which, burrowing in the tissues, causes a yellowish or reddish spot, from which finally appear numerous cylindrical spore-vessels, becoming with age fringed by splitting into threads. More or less injury is done, according to the number of the infested spots, often, however, utterly devastating the tree. This fungus (Gymnosporangia) has a regular alternation of growth on the apple tree and on the red cedar, forming on the latter balls sometimes mistaken for the fruit of the tree. These balls are an inch or more in diameter, and in May they send out, when soaked with rain, conspicuous, yellow, gelatinous masses, which must have drawn the attention of all who have had the opportunity of seeing them. The battle would be a hard one against this species if fought only on the apple tree, but on the cedar it is by no means so difficult. The annually produced balls (galls) can be picked off when the trees are not numerous; or what is still more effectual, the cedars can be entirely destroyed, and the orchard thus perfectly saved. Other such cases are known, and more may be found by proper investigations. It has been proved that the rust of wheat (Puccinia) has an alternate stage on the barberry, and the latter has in some places been carefully rooted out on this account. But facts show that the barberry cannot be essential to the development of this fungus, for the latter prevails in regions where the shrub is not present at all. Either the alternation is not essential, or something else answers the place of the barberry. Suppose this last to be the truth, which indeed is most probable, and suppose this unknown something to be as valueless to the farmer and as readily extirpated as the barberry, what benefits, counted in money, would successful investigations confer! Is it not worth the endeavor, fostered by governmental aid? And if so in one case, what shall we say of the hundreds in which the demand for information is still more urgent, because less is already attained?

Agricultural Fairs: their History and Management;

DELIVERED BY

HON. D. B. GILLHAM,

(*Ex-Pres. Illinois State Board of Agriculture.*)

AT THE FARMERS' INSTITUTE MEETING, BELLEVILLE, ILL.

Nature's first law, for the success of which all other laws conspire, is development. It is the foundation of that progress which is the most conspicuous trait in the visible universe.

It has written the history of our world in the mountains above and in the rocks beneath, and there, in the most conclusive manner, it has demonstrated the doctrine of transmutation of plants and animals—by infidel philosophers wrongly termed "development"—to be false; even in the post-Adamic world it has left its impress upon all things, whether movable or immovable, living or dead.

The giant oak that still lifts its head towards the heavens, in defiance of a thousand winters, is but the developed acorn; and this, in turn, is but the developed cell germ, unwrapped and enlarged by the vital nucleus within.

Organization, growth and development are the only fulfillment of this all prevailing principle. If this be true of nature's law, then that newer maxim, or even law, of the "survival of the fittest," ought also to be true.

The days of the red man with his paint and his wigwam, with his wife as his chief beast of burden in the territory now composing the seventh Congressional District of the great State of Illinois, were but yesterday, and to-day this is a very Eden—a veritable garden, the hearthstone of a civilization without a parallel in history. These children of nature God, in his infinite wisdom, placed here for the purpose of keeping in check the wild beasts that roamed over this land, which the same all wise and powerful hand had placed here to keep the great vegetable production of the most fertile and wonderful soil on the whole earth in check, until in the fullness of time He should direct that a better race should occupy and enjoy it, and this wonderful land fulfil its destiny in an honest and just administration of the most liberal and wisest systems of government our race has known from its inception, and until a civilization grander, more cultured, and hence more exalted, should sit supreme upon the bosom of her prairie home; and in this development our modern agricultural fair is a tripple factor, as it is the source and result of, as well as the incentive to, development.

Go back with me to the days when the labors of the farm were the merest and most burthensome drudgery; when the reap-hook or grain-cradle were employed to harvest the grain, and clumsy, rude scythes for mowing grass; when it required the severest labor under a torrid sun; when a two-horse and a one-horse bar-share plow with their wooden mold-boards, harrows made of wood, the clumsiest, crudest hoes and rakes, constituted the working implements of the farm; the small wheel, with its pedal and fly-buz, for spinning flax, and the larger wheel, with its tramp, tramp, tramp, and turning pin, for spinning wool; the old hand-loom and its companion piece, the dye pot, standing always in comfortable proximity to the old-fashioned fireplace, with *its* helpmate, the crane-bar, upon which our vegetables were hung to boil, and the great iron pots in which our grandmothers cooked the food for our good old grandfathers, who rested in peace after their day's work was done, and too often left the old lady to provide the necessary fuel from the bark off the nearest rail fence;—take these, and compare them with the implements of to-day! when the farmer has plows of every conceivable pattern, adapted especially to every class of farm work; harrows of all shapes and grades, flexible and rigid; rollers, crushers, cutters and scarifiers for pulverizing the soil; drills, gang-plows, reapers, binders, headers, mowers, tedders, hay-gatherers, horse-rakes, hay-loaders for loading onto the wagon, and derricks for hoisting it to the stack or mow, and carriers for moving it to its place; and machinery, so delicately adjusted that, with the same piece, you can plant all kinds of grain, grass or vegetable seeds and the seeds of the fibrous plants known to our vegetable economy; corn-huskers, and cornstalk-cutters, most of which can be operated by a driver occupying a spring seat far more luxuriant than our forefathers enjoyed in their church-going vehicles; while the improvement in the culinary apparatus of the modern housewife's kitchen has kept fairly abreast, though, I must admit, not fully up to it, nor as nearly even as it ought to be,—yet a very great improvement. To those who have witnessed all this—yea, and more: steam harnessed to the thresher, either conveying it to its appointed place of labor, or in threshing and cleaning the golden grain; and also harnessed to the plow, doing the work of twenty horses or a hundred men—I need adduce little argument to prove the great benefits accruing to our vocation as farmers and those of the mechanic, from our annual agricultural and mechanical fairs. And in my humble judgment, to them is due the credit of being the greatest factors in bringing about, in so brief space of time, these wonderful achievements.

Not only has the Fair of modern times provoked the economic application of machinery to the farm and household, lifting both above the quagmire of drudgery; it has also stimulated the expert to experiment in endless directions, that has given us almost count-less numbers of improved varieties of vegetables, grains, fruits, and flowers, and the improvement of our herds and flocks of domestic animals to such degree that could they who had lived a half century ago return to our mundane sphere, they would veritably be "strangers in a strange land."

The modern Agricultural Fair has done more in the past thirty years to create and stimulate inventive genius, and to cultivate that class of talent, than any or all other influences combined.

True the patent advantages guaranteed by the government to inventors are, and have been a very great incentive to the cultivation of this class of talent, yet without the advantages of advertising and explaining the merits of his productions afforded by the Fair, even though patented, not one-half of those inventions could or would find their way to public favor or public utility. Hence, they have been, and are, the most potent factor in aiding the farmer to attain to the system of high farming he enjoys to-day over those of years gone by. It has enabled him to more than double his acres per hand, and greatly increased his products per acre.

It has so increased his powers of production as to enable him to make a crop of corn, ready for gathering, at a cost of one and a quarter day's labor for man and team per acre, and can, all things being favorable, with the use of modern machinery, successfully cultivate sixty-five acres of corn per hand, and can raise a crop of wheat and harvest it at a cost of five dollars per acre.

It it has done this for the farmer, what has it done for the inventor and the mechanic? They, too, side by side with their fellow toiler, the farmer, have largely reaped the benefits made possible, mainly, through our modern Fair system.

I do not pretend to say that this great progress is *all* attributable to the Fair system; I but affirm that it has been the chief factor in its attainment, and has given us the ability to attain to that highest and most satisfactory degree of farming, viz: "that of maximum crops at a minimum cost."

Man is naturally an imitative creature. His use, idea and knowledge of language is imitative of his mother's tongue. Imitation is the first outcropping of the development of human nature. It is yet undecided whether the babe learns by intuitive forces, or by imitation, with the balance of reason largely in favor of the latter. Hence, object-teaching is undoubtedly the surest and plainest for undeveloped minds; and as we are only "children of a larger growth," it becomes in many respects equally applicable to us, and hence the necessity for our Agricultural Fairs, as they are the grandest system of object-teaching ever devised by man.

Perhaps a brief sketch of the origin and history of agricultural or industrial organizations and industrial exhibitions will be of interest. The modern system is of rather recent origin. True, a system of Fairs for the purposes of trade and barter has existed in Europe for perhaps two centuries, of which the great Smithfield Cattle Club Show, and our own Chicago Fat Stock Show, are examples. But these, though national in character, did not, do not, and can not take the place of the truly agricultural Fair, and hence a broader and more comprehensive system was devised, and State, district and county Fairs, and even township Fairs, were organized and are held for the exhibition and display of improved domestic animals, agricultural and mechanical manufactures and art products. The rise and progress of the system would doubtless prove both interesting and instructive as a result of human energy. We will take only a single glance at that part of our subject.

It is but little over a century and a half since the establishment of the first agricultural society in Great Britain. In 1723 there was organized in Scotland a society, which its founders styled "Improvers in the Knowledge of Agriculture." It existed for 32 years, and was succeeded by a second society which, in 1787, after a period of 64 years, was merged into the Highland Agricultural Society, which was honored and encouraged by a royal charter, and annually thereafter paid ten thoasand pounds, or $50,000, in premiums.

The first agricultural society in Ireland was established in 1747, through whose influence sprang up others in various parts of the island, and these were productive of great benefit, not only to the landed gentry and aristocracy, in whose interest all these organizations were instituted, but also among the small proprietors and tenant farmers, and indirectly to the laborers.

In 1777, the Bath Agricultural Society of England was organized for the length of the four counties, viz: Somerset, Wilts, Gloucester and Dorset. Its annually published reports are exceedingly interesting and of great value, treating as they did at that early day, upon the relative value and culture of the various crops then grown, and the breeding and care of domestic animals, and their improvement, as well as much valuable data concerning manufactures, arts and commerce.

Among its contributors was an array of the leading minds of the old world, such as Sir Christopher Hawkins, the Youngs, the two Campbells, Abercrombie, Count De Berchtold, De Saussaure, and other equally prominent men of that day; and it may here be cited as proof, that the interest thus manifested in agricultural associations at that day in England, has borne its legitimate fruit in making that island the most productive country in the world for the number of acres cultivated.

Through the published transactions of this society for the year 1810, we find that there were in existence in Great Britain, eighty-one agricultural societies, beside the board of agriculture of which the renowned agricultural writer, Sir John Sinclair, was president, and the equally well known Arthur Young was secretary—all in good working order, and so great was the interest manifested by both sexes that the Badenach and Strathspey society was presided over by a lady of no less distinction than the Duchess of Gordon.

Coming on down we find that the Royal Agricultural Society of England, which has exerted so widespread and beneficent influence upon agriculture throughout the civilized world, was organized in 1838. Its motto was "Practice with science."

Within the brief space of seven years it was the means of establishing no less than four hundred societies, and ten years later these societies numbered over seven hundred. The most important of these was the celebrated London Farmers' Club, the influence of which was so widely felt that it received the appellation of "Bridge Street Parliament," and this, so far as we have been able to find, was the original Farmers' Club.

The old Royal Society, like its prototypes in this country, holds annual Fairs, is peripatetic in its nature, and the distinction of being selected as the place for its exhibitions is greatly coveted.

In most of the counties of England there are agricultural societies, which, as a rule, are in a flourishing condition.

They hold annual Fairs of inestimable value to the farmers. Perhaps, however, the best recognized representative of the agricultural interests are the chambers of agriculture composed of landlords, farmers, grain merchants, and others concerned in interests connected with the soil and its products.

While all this was transpiring in the old world, the infant States of America were not idle. Manufactures among our people were in their infancy. The greatest minds and noblest citizens were engaged in agricultural pursuits, and even those engaged in the learned professions still clung to agriculture for assurance of support. A large portion of the heroes of the revolution left their plows for the battlefield, and like Cincinnatus, when the war was over returned again to the peaceful art.

The first agricultural society incorporated in America was established in South Carolina in 1785, called the Society for the Promotion of Agriculture. The objects were an experimental farm and the importation and distribution of foreign productions suited to the soils and climate of the State. It accomplished a grand work, and among others of equal value, the introduction and the cultivation of the olive and the vine in that State.

In 1791 a society for the advancement of agriculture was incorporated in New York. It lived only ten years. The second society of that State was incorporated in 1792, under the title of "The Society for the Promotion of Agriculture, Manufactures and Arts."

Again in 1804 a society was incorporated for the promotion of useful arts, in the recital of which agriculture is the first named; and previous to 1815 this society had published seven volumes of its transactions.

As early as 1794, Washington, then president, began to be impressed with the importance of agricultural associated effort. In a letter to Sir John Sinclair, then president of the Board of Agriculture of England, dated June 20th, he says: "I fear it will be some time before an agricultural society, with congressional aid, will be established in this country, yet I hope we shall not be as slow in maturation as other nations have been."

The first proposition for the establishment of a National Agricultural Society, was made by Washington, in a speech before Congress, on the 7th day of December, 1796, when he met the two houses of Congress for the last time.

The subject was referred to a committee of the House of Representatives, who, on the 11th day of January following, reported favorably upon the institution of such a society, under the patronage of the government, which might act as a common centre to all other societies of a similar character throughout the United States, with complete provision for its thorough organization.

The first national association of this description was the Columbian Agricultural Society, for the "promotion of rural and domestic economy," and was organized by a convention held at Georgetown, in the District of Columbia, on the 20th day of November, 1809, and the first agricultural exhibition in America was the National Fair, held by this society at the Union Hotel, in Georgetown, in the District of Columbia, on the 10th day of May, 1810, and among the premiums offered and awarded were, to us, the novel ones of $100, $80 and $60 respectively, for two-toothed ram lambs, showing the interest taken and the importance attached to the improvement of breeds of sheep at that early day.

Is it surprising, in view of this, that American merinos, Cotswolds and Downs are to-day the equal of any in the world? It is recorded, too, as a matter of history, that at this same Fair President Madison wore his inauguration coat, made from the merino wool of Colonel Humphrey's flock, and his waistcoat and small clothes were made from the wool of the Livingston flock, at Clermont.

The first field trial of implements in America was the plowing match at the fifth semi-annual exhibition of the society, on the 20th day of May, 1812, when, with the beginning of the last war with England (which at this time was, of necessity, overshadowing everything else), it was dissolved, having held six successful exhibitions.

On the 14th of June, 1852, a national convention was held at the Smithsonian Institute, in Washington City, under a call by the Boards of Agriculture of the following named States: Massachusetts, Pennsylvania, Maryland, New York, Ohio, Indiana, New Hampshire, Vermont, Rhode Island, the Southern Central Agricultural Society, and the American Institute. Illinois was not among them, although her first State Agricultural Society had just assumed tangible shape, and her first Fair held the year following.

This convention was composed of 153 delegates, representing 23 States and territories, and among those in attendance at its sessions were the (then) President, Millard Fillmore, and his Secretary of State, Daniel Webster.

The preamble to the constitution of this society declares its object to be, "The improvement of the agriculture of the country, by attracting attention, eliciting the views, and confirming the efforts of that great class composing the agricultural community, to secure the advantage of a better organization and more extended usefulness of all State, county and other agricultural societies."

The first Fair held by this society was at Springfield, Massachusetts, in 1854. From this time it held annual Fairs at places selected by the society, one of which was held in Freeport, in our State, in 1859, until the opening of the war of the rebellion, when it closed.

up and ceased to do business. There was an attempt again, in New York, in 1870, to organize a National Board of Agriculture, and another still more recently, but thus far neither have held Fairs.

The New York State Agricultural Society held its first regular Fair in 1840, with an admission fee of twelve and a half cents.

The American Institute Farmers' Club was organized in 1843, and enjoyed a very active career for more than thirty years. Through its published transactions and the newspaper press, it diffused a vast amount of valuable and useful information throughout the country, and numbered among its members many eminent men, and its annual Fairs, held in New York City, always excited a deep interest.

But away back, anterior to any of these mentioned, Massachusetts may claim, and is entitled to, the distinction and honor of offering the first prize for the advancement of agriculture, for, as early as 1803, the Massachusetts Society "for Promoting Agriculture" offered, among others, the following named premiums:

"To the person who shall discover a cheap and effectual method for destroying the canker-worm, a premium of $100, or the Society's gold medal.

[Can it be possible that, with the enterprise manifested by these veteran horticulturists at that early day, and with the great accumulation of true Yankee ingenuity that they begot, and that has been successful in all other directions, that 80 years after these grand prizes were offered—and no doubt awarded—we are as nearly in the dark as were they, again?]

"For a heap of best compost manure, from the common materials of the farm, of not less than 200 tons, with a description of the method, $[illegible]0.

"For the most thrifty trees, from seed, not less than 600, and not less than at the rate of 2,400 per acre, of oak, ash, elm, sugar maple, beech, black and yellow birch, chestnut, walnut or hickory, $25; or, if all of oak, $50; to be claimed on or before October first, 1806."

And other premiums in a similar vein.

From the beginnings thus sketched, these societies have multiplied until there are none of the States, and but few of the Territories, that are without agricultural organizations, holding annual Fairs and distributing large amounts in premiums, that embrace the entire scope of agricultural and horticultural arts and domestic manufactures.

The votaries of horticulture have kept abreast with the agricultural societies. In 1840 the American Pomological Society was formed. Its sessions are biennial, and its meetings are attended by the most eminent horticulturists of the Union. Its exhibitions are composed of contributions from the various State horticultural societies. These have aided materially in fostering a correct horticultural knowledge, and in keeping up the spirit of progress, and to-day nearly every State in the Union has its active working horticultural society.

Dividing the century, closing with the year 1876, into four parts, the number of societies now in existence were organized as follows: From 1776 to 1801, inclusive, 3; from 1802 to 1826, 16; from 1827 to 1851, 375; and from 1852 to 1876, were 1,500.

The number of societies in the various States for the year 1880 is as follows: Alabama 13, Arkansas 15, California 16, Colorado 5, Connecticut 47, Dakota Territory 3, Delaware 10, District of Columbia 5, Georgia 77, Illinois 133, Indiana 99, Indian Territory 11, Iowa 144, Kansas 106, Kentucky 33, Louisiana 9, Maine 49, Maryland 27, Massachusetts 74, Michigan 70, Minnesota 43, Mississippi 11, Missouri 86, Montana 1, Nebraska 35, New Hampshire 21, New Jersey 23, Nevada not reported, New York 153, North Carolina 27, Ohio 138, Oregon 7, Pennsylvania 94, Rhode Island 6, South Carolina 10, Tennessee 55, Texas 41, Utah 33, Vermont 25, Virginia 36, Washington Territory 10, West Virginia 11, Wisconsin 81; numbering in all 1,906 agricultural associations of this class alone, aside from farmers' clubs, granges and others of a similar character.

What a lesson does it teach! What an expenditure of money! What a display of human energy and human enterprise! Aye, what a concentration of the wisdom and intellectual forces of the purest, most self-sacrificing and best minds our continent has produced! Born of the wisdom of its originators, it has been prosecuted and built up largely at personal expense and personal sacrifice.

How dark the outlook at the beginning! How bright the prospects of to-day, and how magnificent the results thus far accomplished; and how worthy, yea, necessary, to the industrial and productive classes of every branch, is its earnest support and continued patronage!

To him engaged in agricultural pursuits, it is one of the potent aids in unlocking and unfolding Nature's laws—who, if successful, must understand the great underlying principles concealed therein.

To the artizan and mechanic, it infuses newer, broader, grander ideas, conceptions and aspirations, and is to all a constant reminder that, for the votaries of *Productive Industry*, there is no resting place, no medium ground, and that progress or retrogression is the order that characterizes the last quarter of the nineteenth century.

As to the manner of organizing and conducting Fairs and Fair associations, it looks like presumption in me to speak, after the successful experience of so many present; yet, as it may provoke discussion that may be valuable, I can not afford to pass it unnoticed, although it will be only the opinion and judgment of one man; yet I promise you that that opinion shall be based strictly upon experience and observation.

I shall divide, and treat the subject under different headings:

1. What kind of an organization is best?

The original or inaugural system of organizing Fairs or Fair associations, as you will remember, was an associated effort that would embrace all, or so many friends of the enterprise as could be induced to subscribe and pay a few dollars, and was incorporated as "The ——— County Agricultural and Mechanical Society." Any one giving a stated sum (and that always small), could vote at any election of officers. A casual glance at this system, without looking at it from a business standpoint, would incline us to prefer it, as it would seem to interest a greater number of people and their support, on account of the small amount of money it required to obtain a standing in the society, and thus in a sense become everybody's institution. But from observation, and in fact from experience of many of us, such is not the case.

Business, my friends, is the order of the day, and, in order to succeed, all enterprises must be conducted upon business principles, and since "what is everybody's business is nobody's business," we find this system of organizing and conducting Fairs in nearly every case a failure. From this we are led to believe that the joint stock plan is the best, and the only possible one, and it, in fact, has all the incentives that the other possesses, as by the subscription of a stated amount of money as stock, which is tangible property, you can interest as many if not more persons than in any other way, and the latter has also the advantage of giving to those owning most stock the most votes and the greater influence in its control and management.

Again, to obtain a living and abiding interest in the society, the amount of money represented by a share of stock should be large enough to secure the interest of its owners in the success of the enterprise by proper management, as wherever a man has his money invested, there you are apt to find his careful attention bestowed; and such amount should never be less than $25, and as much greater as circumstances and locality would suggest, as the larger the sum the greater would be the interest manifested by the owner in the successful management of the society, and the stock should be negotiable as other paper.

2. Organization—assignment of offices, etc.

For a county fair association, after the stock was taken, I would recommend that the organization should be as follows:

1st. A President.
2d. Superintendent of Grounds and Vice-President.
3d. " " Gates.
4th. " " Mechanics and Machinery.
5th. " " Horticulture.
6th. " " Textile Fabrics.
7th. " " Fine and Liberal Arts.
8th. " " Farm Products.
9th. " " Culinary Department.
10th. " " Horses and Mules.
11th. " " Cattle.
12th. " " Sheep and Swine.
13th. " " Poultry.

The president and directors should be elected by the stockholders on the grounds during Fair week. The directors should be chosen as nearly as possible from each township, to divide the interest as equally over the county as possible. The secretary and treasurer should be selected by, and be held responsible to, the board, and as indicated by the distribution, the number of directors should be large enough to allow one for the head and management of each department, and he should have sole control, and be held personally responsible to the board for its successful building up and management.

3d. What is a proper exhibit?

Upon this subject I am somewhat cosmopolitan. In my judgment there is a legitimate place upon the grounds of an industrial exhibition for everything that will be instructive, entertaining or amusing—that is not demoralizing in its nature. And while I would not make the Fair grounds a race-course, yet I contend that the horse, either trotting, pacing or running, as well as in the quiet show-ring by the halter, has a legitimate place upon the Fair grounds; and I have the hardihood to say that when Mr. Beecher, in derision, originated the phrase of the "Agricultural Horse Trot," there was not a man in America, Mr. Bonner not excepted, who enjoyed said "agricultural horse trot," more than did he. And I know, too, that in this I am, to a great extent, contending with popular sentiment. But as an earnest student of the conduct of this class of exhibitions, with an honest desire that they shall be conducive of the greatest good, and that they shall redound to the greatest benefit, pecuniarily, instructively and entertainingly, I should feel that I had evaded a plain duty had I dodged it, unpopular though it may be.

From experience and from observation, I am forced to the conclusion that while there is as much profit, there is more pleasure in breeding, growing and handling the horse than any other class of our domestic animals. His physical conformation is nearer that of man than any other, and his mental endowments, *called instinct*, often appear as near mind, as are frequently shown in the genus homo; while he is the noblest, gentlest, most intelligent, and truly companionable of all our domestic animals. On him we depend for all rapid and pleasurable travel, except railroads, as well as the more plodding of the numerous duties we call on him to perform, and upon him alone do we depend for that recreation and health-giving exercise for our families a carriage ride; his gentle, docile disposition, and his intelligence, differing from all other animals, rendering it safe to do so. In peace, he is man's most useful and trustworthy servant, companion and friend; in war, the gallant, brave, fearless counterpart of his rider. Is it right, because his endowments are so great as to become subject to abuse by mankind, that he, with them all, and all the glory that God has given him for man's encouragement and happiness, shall only be permitted to exhibit in the most humble of his many spheres of capability and usefulness.

The trotting horse is of American origin, an American institution, and is one of the most enjoyable of all animals, as well as most highly valued; and is to-day a necessity to our modern civilization. In presenting your wife a driver, should you give her a plug she would not feel very grateful for it, I imagine. No, you would rather take pride in giving her a horse that, while gentle and reliable, could, when called upon, show his heels to his antagonist at a 2:30 pace. Tis thus you would please and gratify her, and yourself as well, when you took the reins into your own hands.

The thoroughbred, or running horse, the progenitor of the trotter, or fast driver, is in this regard a necessity; more, he becomes a necessity in supplying our army with cavalry horses that are adapted to their peculiar work, and the peculiarly useful and pleasurable animal, that both male and female admire and enjoy, the saddle horse. And as these traits of character depend largely upon development, training or education, and this requires patience and labor, therefore I say give him his place upon the Fair grounds, not only as a menial, but one that corresponds to and displays his noble qualities. And this, by no means, necessitates gambling or pool-selling, both of which are an abomination and under no condition of things should be tolerated on any Agricultural Fair Grounds, but pay them premiums, just as you do your fat bulls and big hogs, and rule out all animals that are kept for the track especially, and the class of men who follow them; and you will do justice to a class of producers and their products to whom, in times past, great injustice has been done. It is claimed, I know, that you cannot control this exhibit and keep it within the bounds of a moral exhibition. From my own experience I know that it can be done, as it has been done; as it is my own, and, I doubt not, the experience of others present, that the jockey system is not simply confined to horsemen, but is to be found in a fair state of development in each of the other classes of live stock exhibitors; the difference being that we have become more suspicious of the horsemen growing out of excitement of track performance. All that you require in their control is rules to govern them, and a faithful application and strict observation of those rules.

4th. What of side-shows, as illegitimate exhibitions?

Our annual Fair is designed for and should be the grand gala week of the year. Held as it is at the close of the producing season, with its long and severe days and months of toil, the only holiday week between January and December, we and our families naturally look forward to it, and anticipate its pleasures as well as its profits. Especially does this apply to the young. For that week we suspend labor, close up our houses, and with our wives and children, and our faithful help too, who need and deserve rest and recreation as well as ourselves, we go to the Fair. At the gate we pay our admission fee for ourselves, families and vehicles—and for what? Not for information alone, but for entertainment as well; and how are we to entertain our young people for two, three, or perhaps four days? You cannot hope to do it by simply an industrial exhibition. It is out of the nature of things. To fill this nich, I would admit any kind of an exhibition that was not monstrous or immoral. I should carefully avoid any kind of gambling device, or peddling hawkers whose only business it is to fleece others, but swings and curiosities or other devices not demoralizing and innocent in their nature, that are calculated to entertain and amuse the young, I would admit, and place them under the control of the superintendent of grounds.

5th. What of refreshments?

We now approach one of the most delicate as well as the most intricate questions pertaining to our subject.

The political significance of the prohibition movement is calculated, yea, intended to blanch the cheek of him who dares to say aught in defense of the doctrine that an evil must be legalized that it may be legally restrained and controlled, and doubtless many is the politician that quivers in the balance, not knowing just which way to fall.

I shall discuss this question no farther than to give my views and experience in the management of agricultural Fairs.

It is, however, a well settled fact that you cannot legislate morals into any people under our system of government. Our free and independent way of doing things is utterly subversive of that class of legislation.

Long experience and service in Fair management has compelled me to carefully consider and experiment watchfully and to note the results of such experiments and observations as I had to make if I did my duty; and after it all it is my honest conviction that in the interest of sobriety and good order for a Fair Ground exhibition, I would admit under license all the lighter drinks and including beer, excluding rigidly all alcoholic drinks of whatever class or kind, and the beer, as it will intoxicate if imbibed too freely, I would place under such restrictions as to forbid its sale, or gift, to any one tending toward intoxication.

My reasons are these: If you admit under license, you have control legally. By the very act of licensing you place the licensee under such obligations as to give you nominal control; while if you attempt to exclude it *in toto*, you only provoke its clandestine introduction in the shape of the vilest compounds labeled whisky, peddled from the pockets of a class over which we have not nor can have any sort of control, and as it is one of these evils that has to be met, the best way is the sensible way to meet it. and as the licensed vender is always jealous of the rights he pays for, you have a vigilant eye to aid you in detecting the pocket peddler, and your greatest trouble will be to see that the licensee does not sell to those tending to intoxication.

In conclusion gentlemen, if you would avail yourselves of all the benefits of your Fair Association, let it form the nucleus of all your associated efforts. In other words, let not your school year close with the close of your Fair week. If possible, hold institute meetings during Fair week, if not, hold them at stated intervals during the year, for the purpose of discussing subjects pertaining to your fraternal interests. Imitate the trades and professions all about you by associating yourselves, both for mutual improvement and protection, looking after matters that pertain to your peculiar interests, whether as producers, consumers, or simply as citizens of a representative republic whose responsibilities and burthens, as well as privileges, you must share, leaving behind the prejudices of the dead political past; those old issues have had their day and are dead and buried; let them rest, and let us see to the present and look out for the future.

The subjects to be presented at these meetings should not only embrace agriculture, horticulture and the domestic arts, but also those pertaining in any way to the politico-economic interest of this great commonwealth of ours, and especially those maintained by taxation, such as normal, agricultural and common schools—not in a spirit of opposition—by no means; but as in part, our property, and to that extent our responsibility. Roads and bridges, public systems of drainage, and laws for governing them; commerce, commissions, inspection, transportation and the laws concerning them, and taxation in all its varied and complex forms, whether local, State or Federal, and laws pertaining thereto, of all which we know too little.

The time is fast approaching, gentlemen, when, if we are not prepared to meet these issues, by the force of aggregated wealth, consolidated corporate capital and unity of action in organized trades and professional unions, that history will again repeat itself, as it has in the past—that our vocation, the purest, most healthful and truly elevating of all human arts, will, as it did in the middle ages, descend to that very low grade in the scale of occupations, when each farmer had to sell or ally himself to a moneyed lord for representation and protection.

Such an organized effort through the County Fair Associations, prudently conducted, centering in the State Association, would prove a powerful force in shaping legislation, both in regard to our eleemosynary, penal and educational institutions, in all of which we take pride, and desire conducted upon a liberal and humane scale, —yet without a Grand Pacific Hotel in their centre,—and the equalizing of the burthens of taxation would also tend to elevate our profession above the plane of dependents upon other professions for this legislation, giving to us that spirit of self-reliance that conscious power only confers, and enabling us to learn without a teacher that brawn is far cheaper to purchase than brain, or that he who would be taken care of must learn to take care of himself.

IMPROVED STOCK.

By Col. Chas. F. Mills, Springfield.

Read at Farmers' Institute, Belleville, May 17, 1882.

Illinois is the leading live-stock breeding State, and our farmers cannot afford to raise scrub stock. There should be a law making it a penal offense to use sires whose purity of breeding could not be established beyond question by the published herd books. There will for years be a large and profitable demand for good stock that cannot be supplied by Illinois breeders, who should not delay in increasing their facilities. Breeders should neglect no opportunity, and spare no labor or capital necessary, to make this State the recognized headquarters for improved stock, and the business should be so advertised as to cause stockmen from all sections of the United States and Canada to look naturally to Illinois, when they wish to purchase the best bred animals of individual excellence of the several recognized breeds.

The climate, soil and central location of this State give our breeders natural advantages not excelled by other sections of the country, while in the production of grain and forage plants best suited for raising stock, Illinois is not surpassed by any other section. Farseeing stockmen, appreciating the situation, are preparing for the future demand, which can but result in handsome returns to such as breed and sell with discretion.

It is not the purpose of the writer to present views on the science of breeding, or to call attention to the comparative excellencies of any of the particular breeds of farm stock. The breeder's skill and capital have been expended for years in the work of developing and perfecting the various types of our domestic animals, and all the essential requirements have been brought to a very high standard of excellence. The live stock breeder, in establishing flocks or herds, can avail himself of the results and experiences for many years of veteran breeders.

The purchase, from reputable breeders, of any of the well-established breeds will, in proportion to the amount invested, secure medium or superior specimens of stock, especially adapted to various tastes, localities, soils and markets. The matter of selection of breeds best suited to various sections and preferences, demands the most careful consideration, and must be largely decided by each party for himself. Beginners will do well to make selections of breeds of stock that have been bred for some specific object, and in the specialty sought are not exceeded by any other breed.

Cattle bred for both beef and dairy products, never reach the highest standard of excellence in either of these specialties. A horseman never expects to find speed and draft in the same animal. A breed of sheep noted for fineness or weight of fleece, will not make a favorable comparison for quality of flesh with a breed that has been carefully bred for generations for mutton. The breeding of improved stock should be the last degree conferred upon the agriculturist; and it is the ambition of the majority of progressive farmers, possessing lands adapted to stock breeding, to be recognized as successful breeders of some of the improved breeds of domestic animals. The inspection of superior specimens of fine stock on a neighbor's farm, or at the county fair, inspires men of more than average enterprise with the desire for ownership; and as it takes but a limited period for the leaven to work, in due time an investment is made in a male, and perhaps a few females, if there is sufficient bank account to draw upon. The result of the first cross or pure-bred sire upon the native or grade dams, makes the party ambitious to own one or more pure-bred females. The enthusiasm increases in proportion to the skill and attention given to the breeding and feeding of the stock. The second step generally, with the successful breeder, is the exhibition of stock at the fairs; and the advantages to the ambitious breeder resulting therefrom, cannot be estimated too highly. The comparison with equally good or better stock, the impartial criticism of the general public and purchasers, the awards of the committees, the suggestions of experienced breeders, the result of attending a well-managed fair for a week, is frequently of more advantage than a year's experience with herds and flocks on the farm. To obtain the best results, the aspiring breeder must think, observe, read and exchange ideas with the most successful breeders.

A man, when thoroughly interested in the breeding of fine stock, is effectually cured of any predisposition to "loaf away" his time in town; he finds more agreeable and profitable associates than the average loafer in his stables and pastures. The desire for information makes one or more weekly agricultural and live-stock papers a necessity, and reading and thinking soon increase the demand for general information, and subscriptions to the metropolitan dailies are soon followed by the purchase of literary, scientific and other works demanded by progressive students.

The introduction of improved stock upon a farm, and the increased value as compared with scrub stock, necessitates better care and accommodations. The straw-shed or timber wind-break is succeeded by a more comfortable frame barn or shed, which, in due course, gives place to the well-appointed stock barn, and thus makes the old fences and unsightly out-buildings appear to a disadvantage, and it is only a question of time, when new and attractive structures are built, and the old log corn cribs, and other pioneer accommodations, give place to more modern, comfortable and convenient quarters for the shelter of man and beast, as well as the storage of forage and grain crops.

Farmers in Illinois cannot afford to use other than pure-bred sires, especially cattle, sheep and hogs, and the value of lands, with the spirited competition that exists in all the markets for good beef, dairy products, wool, mutton and pork will, in a short time, make it necessary for the "scrub stock breeder" to take what little is left after the mortgage on his farm is settled, and emigrate to the West, where cheap lands and abundance of wild game will, for a time, enable him to exist until the march of progress, and the introduction of improved stock, compels him to remove still farther West.

There has been, and always will be, a good return for capital invested in breeding improved stock, when conducted by practical and intelligent stockmen. Due attention paid to legitimate breeding of improved stock, returns as sure and remunerative an investment as any ordinary business, and may be indefinitely increased by good management and judicious advertising.

Purchase and sale of fancy stock for speculative purposes, is a fascinating and dangerous business, generally resulting in failure which is far-reaching in its influence, as each disaster of this kind is the argument used with many prospective breeders, by the enemies of progress, as to why investments should be made in improved stock, the breeding of which would result in a profit; while the same feed and care given to scrub stock, would entail a loss. Success in handling well-bred stock depends entirely upon the ability of the party to breed and handle desirable stock, combined with the business qualifications necessary to sell the same to advantage; and a few suggestions will be made in reference to these two divisions of the labors of a breeder—viz., breeding and sale of improved stock.

BREEDING.

In starting a herd or flock, select the best foundation your means will permit. It is advisable to purchase one superior female, rather than invest the same amount in several medium animals. The increase in a few years from one good female, coupled to good advantage, will return a much greater profit than the product of half a dozen inferior animals. Parties breeding native stock are justified, if necessary, in borrowing money at a high rate of interest, for the purchase of a well-bred sire. The increased revenue from the sale of the better grades, will soon provide means for the ownership of pure-bred sires and dams. As soon as a practical breeder is thoroughly impressed with the fact that the sire is more than half the herd or flock, his success is assured. In choosing a sire, the experienced breeder selects an animal of the most perfect form attainable, with the qualities to be propagated well developed. and from ancestors of unquestioned excellence. A marked improvement with each succeeding generation is the result. It is frequently much more to the interest of the breeder to buy additional females, or to in-breed to a certain extent, than to use an inferior sire, and thus, in a single season, lose the good results of years of careful breeding. Too much attention cannot be paid to the ancestry of the sires used, and some of the most successful breeders devote much time to the study of the herd books.

The excellencies of the several breeds of improved stock are the result of skillful breeding, and the record of the breeding or pedigree may be studied to much advantage by the beginner, in connection with the form, handling, feeding and other qualities.

It is a question, whether neglect to intelligently care for live-stock, has not resulted in deterioration to as great an extent as the want of judgment in the selection of sires, and improperly mating with dams lacking form, constitution and other essential qualities necessary as a foundation upon which to raise creditable specimens.

SALE OF STOCK.

There are, doubtless, thousands of successful breeders in the United States, who fail each year for want of sufficient knowledge or business qualifications necessary to dispose of surplus stock for its market value, and at a reasonable profit. In the sale of improved stock to the best advantage, the first essential qualification is the possession of a reputation for probity, and its synonym, integrity. Without this requisite there is always a shadow of suspicion in the mind of a purchaser, that there may be misrepresentations concerning the pedigree or breeding qualities of an animal, whose individual excellence might otherwise be all that could be desired. A man with a reputation of giving personal and constant attention to his stock—other things being equal—has great advantage with the practical breeder in making sales over the stockman who entrusts everything to his herdman.

The breeder who daily posts up and examines his gestation record, and has his stock recorded, will make good sales, while his neighbor, with equally as good stock, will lose many customers, resulting from the suspicion that there is a lack of systematic business and too much guessing. The careful breeder selects from breeding establishments, where the books are always posted, and memory does not take the place of the record.

There are several methods of selling stock, which are adopted by the various classes of breeders. A breeder who has no taste or qualification for selling stock by correspondence, the result of advertising in the live-stock or agricultural papers, frequently disposes of his surplus stock by exhibiting at the fairs. Such sales are very satisfactory to all concerned, as the purchaser has an opportunity of examining the stock critically, and for comparison, while the seller receives the cash in hand. Another class of breeders is generally composed of the more wealthy breeders, who have ample capital, and prefer to dispose of all their surplus stock at public sale. These public sales, in proportion to the extent of the advertisement made, the quality of the stock, and the reputation of the breeder, attract buyers from a distance, and the spirited competition for certain animals frequently results in sales at better prices than could be obtained at private sale.

There is a demand for more improved stock than can be supplied at remunerative prices for years to come, and the breeder who does not advertise and dispose of good stock at a profit, has no one but himself to blame. The best sales made are generally the result of judicious advertising and correspondence which follows the appearance of a card in papers which circulate among the class of farmers desiring improved stock.

The elements of success in breeding and selling improved stock, may be briefly summed up in a sentence: breed good stock, deal honestly, advertise judiciously.

MIXED HUSBANDRY.

BY

HON. E. M. WEST, BELLEVILLE.

READ AT THE FARMERS INSTITUTE, BELLEVILLE, MAY 17, 1882.

In the endeavor carefully to examine the subject of "mixed farming" assigned to me, to draw from it some useful lessons that might be added to the sum of valuable and practical information, for the mutual improvement of a class that comprises at least one-half of the inhabitants of the globe, there were difficulties that presented themselves in the very beginning of its consideration.

So diversified are the productions of our immense territory, our climate so varied, soils so unlike in their constituent elements, that no general theory would be applicable to all sections.

The fact is so patent, it needs but to be stated, to command the assent of any intelligent person, that in the Southern States contiguous to the sea, where rice is raised in such abundance, and the sugar-cane flourishes so luxuriantly in the sandy loam of Louisiana, it would be folly to attempt to raise spring wheat, which is one of the chief products of Wisconsin, Michigan and Minnesota, or to exchange the apple orchards of New England for the orange groves of Florida, or the cereals and grasses of Ohio and this State for the cotton of Alabama, Mississippi and Texas. There are sections of our extended domain so adapted to the production of certain staple articles, that excel in excellency and quantity those raised anywhere else, under the most favorable circumstances, that their very superiority will demand the continuance of their production. Yet even there it may be demonstrated that *a change of crops, with the use of fertilizers*, is indispensable to the continued fertility of the land. It may be asked, then, why attempt to grow corn and wheat on land that, with fair cultivation, will produce but twenty bushels of the one, and ten to twelve of the other to the acre, on which a bale of cotton can be counted. Our answer is, more labor will be expended, and a larger yield obtained by a rotation of crops; a self-reliance indispensable to success established, and a sense of dependence on other sections removed, exorbitant charges for transportation curtailed, and the advantage and luxury of home production inaugurated.

It would be a pleasant duty on this occasion to show that if our fathers had strong incentives to choose the lovely and fertile plains of this State for their homes, and that of their posterity, with the many perils to encounter, and privations to suffer, when the wild beasts of the forest held sway, and vast herds of deer, elk and buffalo fed on the rich and luxuriant grasses of the prairies; when forts with stockades had to be built for protection, and the brave rangers, by their vigilance and courage, protected them from the attacks of the Indians; when there were no markets and no money, and few, indeed, were the most common appliances of a primitive civilization, how much more powerful are the motives and inducements to inspire us to labor to more perfectly develop the resources of this glorious heritage, and enjoy the blessings that result to us from their sacrifices, and our own proud achievements. A perfect contrast can only be drawn when we point to the villages, towns, and large cities filling the land, furnishing to us good home markets, instead of the wild wastes without an inhabitant, as in days of yore, possessing agricultural implements of the greatest variety, and adapted to the most varied wants, exhibiting in their construction the triumph of the highest manufacturing skill— mowers and reapers that have displaced the scythe, sickle and cradle, within the memory of some present to-day—machines that will cut and bind in a day from ten to fifteen acres of grain, and threshers that will separate the golden wheat from the chaff, to an amount of more than twelve hundred bushels per day; performing as much as one hundred men with flails, or one hundred and eighty horses and men by tramping it out, as in former years.

Besides all modern appliances to speed labor, and for home comforts, we enjoy the advantages of farmers' clubs, agricultural societies and boards, agricultural colleges and institutes, with papers especially devoted to farm interests. The lightning speeds the messages flashed on the wires, so that all portions of the earth and islands of the sea contribute their stock to the general news each day; and the telephone, with its nicely adjusted mechanism, brings to the ear in audible tone the familiar voice of friend. Bridges span our mighty rivers, and the mouths of our majestic streams are deepened for the vessels of largest tonnage that bear the commerce of nations. But these are not all: The Department of Agriculture furnishes reports of the condition of crops, from not only all sections of our country, but those of the civilized world.

Through similar sources of information, which are as accurate and reliable as a wisely organized system can attain, our friend, Brother Fisher, the efficient Secretary of the State Board of Agriculture, furnishes as safe data, to every reading farmer, as the most favored produce merchant in the country can possess. Who can estimate the value of these statistics to the agriculturist, that show him the deficiency in certain sections, and abundance in others, guiding him as to the best time to sell his surplus, and where the highest market price can be obtained.

While the intellectual strength of man has been employed through all ages to discover and apply scientific knowledge for the benefit of our race, it is the province of the farmer to gather up and put in practice whatever especially appertains to the productiveness of the soil; for by so doing he adds to the stock of human comfort and happiness. It has been wisely said that, "The whole people of the earth are dependent for their existence upon the products of the earth, and every improvement which tends to the increase of these products, multiplies the happiness of mankind to a degree greater than any other operation of life."

Although the prosperity of nations depends not on any one industrial enterprise, but rather upon the development and blending of many pursuits, yet agriculture is the pillar and foundation of all solid government, and the strength of true civilization. Commerce draws its vitality from it, and with its handmaid, manufactures, constitute the three massive columns that support the stately structure of our national greatness; each bringing and weaving its separate wreath of laurel and flowers to entwine and cover the whole with its beauty and glory.

In estimating the advantages we possess in this immediate section, we must not omit the mention of the special facilities of transportation to eastern, northern or foreign markets. With all the railroads leaving the city of St. Louis, we have the Mississippi river, as a great competing highway, which at no distant day, when a safe channel of more than twelve feet of water is secured, by liberal appropriations by Congress, will bear on its bosom, in steamers and barges, the commerce of this immense valley of the Missouri, Ohio and its tributaries, reaching from the Rocky Mountains on the west to the Alleghanies on the east.

With a climate subject to no unnatural changes, where the rainfalls are generally even and abundant, and the seasons merging into each other with well-defined regularity, we have the crowning excellence and patrimony of all, a soil of unsurpassed fertility, with the qualities of continued productiveness, the capacities for recuperation without unusual expense. With these advantages, and many others that might be mentioned, can it be a source of wonder that half a century has scarcely passed, that this former wilderness has been made "to rejoice and blossom as the rose," furnishing homes, not only to native-born citizens, but inviting an immigration from foreign countries, which, appreciating our favored position and resources, have cast in their lots with us, and by their intelligence and industry have advanced the material wealth and prosperity of the country, in a ratio unprecedented in the world's history. Under these stimulants, real estate is held as a valuable investment; farms are sought and purchased, and the prospects for future wealth and present independence are alluring and inspiring. Contemplating these pleasant pictures before us, with anticipations of progressive attainments to encourage us and our children in the years to come, we appeal to you to bear witness to the fact, that these statements are not overdrawn, and no exaggerations have been made in regard to the rich and magnificent provision Nature and Providence have invited us to enjoy.

Much that has been mentioned already may not appear directly connected with the subject under discussion, and may be regarded as the preface written by an author, which was so long that it required an additional volume to give to the public the subject of his history. Allusion has been made to the strength and production of the soil originally; and the assurance given that by proper cultivation, with rotation of crops and manuring, this fertility can be kept up, and a violation of the laws of nature is followed by diminished production first, and then by exhaustion and sterility. True wisdom suggests that we take as good care of our land as a man should of a good constitution, who will so use it in youth that he may enjoy a hale and vigorous old age, free from the aches and decrepitude that are too apt to follow dissipation and excesses. The thought should be pressed home, that the land should be regarded as the farmer's capital, the yield of his field as his profit to be enjoyed; but that he should refrain from diminishing that capital by ever taking from it, and adding nothing, for if a like practice be followed by a man in business, bankruptcy would be the inevitable result.

So, the repeated cultivation of the same crop will bring barrenness to the land and impoverishment to the owner. Many seem to think that their land forms an exception to the general rule; the depth of the soil is too great to be affected by a process that has worn out others just as good; but we would presume to interpose our warning before the evil is accomplished. Dark shadows and blight have fallen on as fair fields as we possess. Need we point to thousands of acres of land, once strong and fertile, in Virginia and North Carolina, impoverished by raising tobacco from year to year; or to the same lamentable results in other Southern States from the continued cultivation of cotton? Field after field has been turned out to be washed in deep gullies, on which a few bunches of sedge grass may grow, once smiling in its virgin fertility and which might have been saved from exhaustion by a regular rotation of crops.

Within my own recollection, the Genessee Valley, in the State of New York, was celebrated for the immense yield of as good wheat as was ever raised on the continent, but the habit of robbing the the soil continually at last rendered the profitable raising of wheat abortive; and, the last time I passed through that beautiful portion of the State, I saw hundreds of acres devoted to nurseries, with grasses and pastures for herds of cattle and other stock, that will, in time, restore the elements of its former fertility. The same unfortunate and reprehensible results apply to many portions of our country, and they should be warnings for our instruction. Large farms are too generally devoted to the cultivation of one particular plant or cereal, when the work of destruction is carried on a bigger scale, whereas, smaller tracts are better adapted to mixed husbandry, or rotation of crops, and are, therefore, to be preferred.

With mixed farming, there follows, naturally, the improvement of farm stock, and, while remuneration is sure, the rearing of domestic animals, instead of diminishing the productiveness of the land, increases its strength and value.

Beside the cherished objects of homes distinguished for their brave men and beautiful women, what induces stronger attachments to the citizens of Kentucky and Tennessee than the famous blooded horses, and herds of improved cattle and sheep that graze on the rich blue-grass pastures of those States, and which, after drinking the pure running water, lie under the shade ot the massive oaks? These are pictures that lift up the heart with gratitude to God, and inspire a love of country that is appreciated by an American citizen as ardently as by any race on earth.

I could have stood with head uncovered in the presence of that most illustrious statesman who delighted to withdraw from the cares of high official life. and the adulation of his fellow citizens, to the quiet of his home at Marshfield, and have entered most heartily into the lively satisfaction he felt, and so much enjoyed, when his noble herd of beeves and oxen were driven before him. If the great Webster could, by mixed farming, the cultivation of grasses, and the raising of domestic animals, bring up to a condition of fertilization the sterile coast of the Granite State, enriching the soil by that process more than by all the sea weeds the ocean could furnish, or other artificial stimulant, what excuse can the agriculturist of this favored State have for the exhaustion of a soil abounding in all the elements of the most wonderful fertility?

Rotation of crops makes us the better acquainted with the nature of our ground, the peculiar location of our fields and their wants. For some portions, drainage by tiling may be necessary, so that the fertilizing properties of the land may be absorbed and retained as food for plants, instead of being carried off and forever lost to us. Clover may enrich other parts, soiling others, for, most assuredly, diversified crops are to the ground what a variety of generous food is to the human and animal system, more tempting to the appetite, and more invigorating in its effect.

It may be said, however, that to meet our own increasing wants, and the demands for our surplus in foreign countries, this continued draft for cotton and grain on the resources of our soil is imperative, and can only be met by this exhaustive process. An answer to this is furnished, when we affirm that the diversified system of farming will not only secure a more permanent productive strength to the soil, but will yield all the surplus required at home and abroad, without the present danger of over-production, and the consequent ruinous decline in prices, and unavoidable loss to the producer.

It is not the highest wisdom to live only for the present. With a population of fifty millions, and an immigration from foreign nations unprecedented in numbers, there is no fear of a general want at present—famine has never threatened the inhabitants of this land. But the time will come when we will have to feed a population as dense as England, Germany and France, if not as numerous as China or Japan; tnen the natural strength and richness of the soil, with all the lessons of scientific and progressive knowledge in agriculture, will be needed, and will have to be employed to keep up the fruitfulness of the earth, and feed the hundreds of millions of this country alone. The process of raising grain, cotton or other raw material for foreign markets, exhaustive in its effects upon much of our land already throughout the country, is diminished by the practice of mixed farming, the growing perishable crops that are less destructive to the life of the soil, that help to increase the population of the State, develop all other industries, build up a home market, thereby enhancing the value of the land, and establishing the strongest incentives to make it more productive.

In proof of this proposition, go with me into one of our market or fruit stands and see the new cabbage, potatoes, and many other vegetables, with bananas, oranges, lemons and strawberries, from the south, now offered for sale, that have become necessaries to us, and that are as common now as they were rare before the war. These enterprises have been, to a great extent, inaugurated of late years, and prove that there are vast undeveloped resources in that section, that but need the touch of man's hand to make them objects of attraction to others living in colder climates, and sources of wealth to the denizens of that luxuriant region. Before the war they were objects of too little importance to the independent owners of those vast estates which now prove sources of additional remuneration under the system of mixed farming and smaller farms.

Thus, our local attachments become strengthened, the orchard with its luscious fruits; the vineyard, with its fragrant bloom in spring, the harbinger of its rich clusters in the autumn; the garden, with its store of vegetables; the fields, with their melons and diversified grains; the parterre, assigned to flowers; the plat, to berries and small fruits; the lawn, with its carpet of soft grass and the ornamental shade trees; these give a charm to home, and make it, with the endearments of wife and children, the dearest spot on earth. to which one s memory fondly reverts even in old age, and around which our attachments cling.

In our inordinate greed for riches, engendered by this false system of over-cropping, by prematurely wearing out our lands, visions of larger wealth on the new soils still farther west induce us to surrender all the comforts of our old homes, and sever the pleasant associations and friendships of past years. Forgetting a higher good, we place too low an estimate upon the blessings and privileges that lie at the foundation of the purest virtue, the truest patriotism and the strongest love of liberty. It is not intended in this last statement to convey the idea that the love of money is the impelling motive of all that move. There may be many circumstances to justify selling out, and seeking other locations. The increase of families may demand a larger patrimony for the children; more congenial society, oppressive taxation, the enforcement of unequal and unjust laws, or the unfaithful administration of wholesome ones, may warrant a change.

We have thus attempted to bring to your consideration some few arguments in favor of mixed farming. No one feels more profoundly than myself the weight and importance of this subject, and the inadequacy of this effort to meet the requirements of the occasion, or the theme itself.

Intimately connected with this subject there is a lesson to be learned, which I feel persuaded to mention, if it be not regarded as an infliction on your patience. It is one we conceive to be pressing and important, too long neglected, if not wholly overlooked. We allude to the practical teaching of a true enjoyment of our labors, and blessings bestowed by a bountiful Providence on our time, labor, talents and industry. And if you regard the suggestions as worthy of your recommendation, an endorsement by your honorable body would give a weight to the utterances a private individual could not hope to secure. It has been said that "the man who has made two blades of grass to grow where but one was produced," is to be regarded as a benefactor, and rightly so. The agriculturist who instructs us in the mode of renovating and enriching worn out land, or preserving its nutritive qualities, so that it may groan under its abundant harvests, is entitled to the high distinction of being called a philanthropist. But I think the time has come when we may, with propriety, divert the minds of the farmers from that exclusive aim, and direct them to motives less sordid, objects more elevating and ennobling. They should be taught that rest and recreation are as necessary to the wearied body as to the overtaxed brain of the professional or business man; that they do not disqualify them for renewed efforts, but give zest to the social comforts and pleasures, and energy to the performance of those duties that bring their true reward. The necessities for making the farmer's life one of incessant privation and labor, should not exist, nor do they to the extent many suppose. There should be alloted time for reading, and indulgence in the amenities of life. The fact that men can, by the use of improved implements and machinery, adapted to all the demands of farm labor, accomplish so much, and with less physical efforts than formerly, is a strong plea for needed relaxation.

When we learn to expend some of the money we make, on necessary improvements and indoor comforts: when works of art minister to a cultivated taste, and the social instincts of our nature are gratified by reciprocal visiting our relatives and friends, and our faculties for doing good enlarged, morally, politically and socially, this temporary release from continued labor and exhaustive effort becomes as delightful as necessary.

We have been urged to form organizations to give us political power to fight the various monopolies that oppress us; to form clubs and granges to advance agricultural interests, whose aim is mutual instruction and benefit; State organizations, composed of the ablest farmers, meeting annually to devise plans to promote the general welfare of the people in the State Legislature; and your Institute likewise, to arouse general action, and quicken thought on all subjects connected with the agricultural prosperity of the State. All these may have been necessary, and, no doubt, much good has resulted from their existence and action. But to me, it seems that their purposes and designs are to the accumulation of wealth. To cut down charges for transportation, that more money might be realized from our produce in other markets. To have co-operative stores, to keep and share the profits among ourselves. In a word, to make the acquisition of money the end of all activities.

In this eager race, consumed by this devouring ambition, we look upon the smiling face of nature with no semsation of gladness or delight. Why should not the farmer be the happiest man on earth? With every faculty of mind and body energetically employed in useful labor during the day, with sufficient leisure for reading and pleasant recreation, he is prepared, by night, for the sweetest and most quiet repose. Who better prepared than he to inhale the perfume of trees and plants, when the fresh wind rises in early morn, when men and animals awake to duty, the flocks leave their fold for the pastures, the pigs for the clover field, the birds, with glad songs flit from tree to tree, the chickens scatter over the lots, the gentle kine stands ready to fill the flowing pail, and the bee is on the wing to gather honey from the flowers?

"He, when young Spring protrudes the bursting gems,
Marks the first bud, and sucks the healthful gale
Into his freshened soul, her genial hours
He full enjoys; and not a beauty blows,
And not an opening blossom breathes in vain."

From the orchard in full bloom he should drink in delight, and not confine himself to the estimation of the yield in dollars and cents for the gathered fruit. The harvesting of our grains and fruits should be attended with song and joy, instead of the rush and fatigue that takes all poetry out of life, and makes us indifferent to the waving grain, or the heavy sheaves that fill our barns. One of the chief lessons to be learned by the farmer of to-day is the proper enjoyment of the rich bounties of indulgent Heaven. Let it be felt by grateful hearts around the fireside in the family circle.

Nor should he overlook the comfort of his children; time should be given, and opportunities furnished for the acquisition of an education suitable for their position in life and society; principles of sound morality inculcated, and a love of truth, integrity and sobriety daily instilled: home then being made to them happy, they would grow up attached to rural pleasures and duties, and the allurements of the world, or gaities and dissipations of the city, would have no superior charms; "rich in content, sure peace is theirs, a solid life estranged to disappointment and fallacious hopes, they drink the pure pleasures of the rural life."

Beware of making the duties of farm life so onerous, of entering so little into the sympathies of your children, or neglecting or refusing them needed recreation, as to sour them against this wholesome and tranquil life, or drive them from their homes. On Sunday have them to attend Sabbath school and church with you, teaching them that "the fear of the Lord is the beginning of wisdom." Encourage them to practice all innocent games and athletic sports; never let them miss a good instructive lecture; teach them the use of the gun, and sometimes go fishing with them, and have pleasant picnic parties, having them to grow up in the most perfect confidence of their parents. Families so trained and nurtured are the life-blood of a nation; to such all seasons lend their peculiar charms and mercies, the day's commencement is ushered in with some new delight, and when at its close the labors are ended, who so well prepared to enjoy the rewards of faithful industry? Of such, in the innocence and ferver of youth, Scotia's noble bard sang:

"Oh happy love! where love like this is found!
Oh, heartfelt raptures! bliss beyond compare!
I've paced much this weary mortal round,
And sage experience bids me this declare—
'If Heaven a draught of Heavenly pleasure spare,
One cordial in this melancholy vale,
Tis when a youthful, loving, modest pair,
In others' arms breathe out the tender tale,
Beneath the milk-white thorn that scents the evening gale."

And in mature manhood, substituting our own glorious America, may be added—

"Oh, Scotia! my dear, my native soil!
For whom my warmest wish to Heaven is sent!
Long may thy sons of rustic toil
Be blessed with health, and peace, and sweet content!
And O! may Heaven their simple lives prevent
From luxury's contagion, weak and vile!
Then, howe'er crowns and coronets be rent,
A virtuous populace may rise the while,
And stand a wall of fire around their much-loved Isle."

The city may have its attractions and advantages—I grant it has—but give me the farm, where youth has its freshness, manhood its vigor, and where old age comes with such gentle approaches, and we are ever surrounded with those incentives to contentment and those endearing charms that keep in continued exercise the noblest sentiments of an earthly existence.

AGRICULTURAL EDUCATION.

BY

PROF. GEO. E. MORROW, CHAMPAIGN.

(*Dean Illinois Agricultural College.*)

DELIVERED AT THE FARMERS' INSTITUTE, BELLEVILLE, MAY 17, 1882.

The following is an abstract of this address, which was spoken from brief notes:

The subject assigned me will command your interest, whatever may be true of its treatment. Intelligent Americans are interested in and believe in education. They believe it should be for all, and not for a few, as was once the general belief, and is even now believed in many countries. They believe every child is entitled to at least a common school education; because they believe education may be a power for good—that other things being equal, he who knows the most will succeed best, in any calling. Education will not supply a lack of brains, of common sense, of energy, of integrity, but it will vastly help those who possess these things. All honor to the men and women who have done grand work without the education of the schools; but these men and women, as a rule, readily admit they could have done much more had they been so fortunate as to have had good training in the schools. Education has spoiled some men, but most who have made failure of life with a good education, would have equally failed without it. You believe these things.

And at such a meeting as this a genuine interest in education for the farmer may be safely assumed. Many of you are not directly connected with agriculture, but you recognize it as the foundation industry; the one on which others largely depend. You believe with Burke, "on every country the first creditor is the plow." You believe with one of the most graceful as well as one of the most sensible of writers, George William Curtis, that it is peculiarly true of our country, that "the test of national welfare is the intelligence and prosperity of the farmer." You recognize that agriculture is not only now but must long continue the greatest industry of our country—in which our census reports tell us there are now 30,000,000 of people directly connected with this business. You recognize that nothing so helps the town as does the prosperity of the country surrounding. You do not need argument to prove that the education of the millions who are to conduct this great interest in the future, is a question of vast importance.

What shall that education be? Our answer will greatly depend on our definition of the word farmer. There are many classes of farmers, representing almost all grades of intelligence, education and success. In any community you may find men entitled to the names, merchant, lawyer, doctor, preacher—who are miserable failures as men, and in their work. So the Indian, who lies in the shade watching his squaw plant a few hills of corn, or a lazy, drunken, ignorant squatter, may claim to be a farmer. At the other extreme are farmers who have and use as much brain power, as true an education, and who make as grand successes as do the merchant princes or the great leaders of the so-called learned professions. The education which will abundantly suffice for one class, will miserably fail for the other.

Only a few weeks since Mr. Gladstone pointed out that the skill required by the farmer to make a fair success, is greater than that required in manufacturing and trade. And it has been truly said that no calling requires for its highest possible development, more ability or a wider range of knowledge.

The farmer deals with the soil, with plants and animals, in health and disease. He is dependent on the rainfall and the temperature. He must adapt his work to changes of climate and conditions. In modern times he needs a good knowledge of machinery. In many of his farm operations he becomes strictly a manufacturer in the narrow sense in which the word is used. In every part of his work of production he will be helped by a knowledge of science or its applications. And when his crops have been produced, he needs all the knowledge that makes men in other lines successful business men. In these days of competition and easy transportation, he needs wide intelligence to wisely dispose of his crops. In America, even more than in any other country, there is a special need of education to the farmer to discharge the duties of citizenship. Were it not that time forbids, it were worth while, in a "farmers' meeting" to remind you that the farmer is something even more than a producer, a seller, a citizen—that he is a man, with a man's destiny before him.

There is not only need for education for the farmer, but there is no room for complaint that not only a narrow range of subjects lie before him,—the difficulty is to choose, from the many important things, the few for which time can be spared.

In educating a boy for the work of the farmer, we must not forget that he needs training, development, as well as to acquire knowledge. There is a disposition to undervalue study for any purpose than the acquisition of so-called practical knowledge. A man needs to know how to make use of the facts he learns, as well as to learn facts; much study, in school and out of it, may be of great value, even though it do not bear directly on the line of work proposed. The beginnings of an education for a boy expected to become a farmer, need not be different from those for a boy expected to become a merchant, a lawyer, or a minister. In each case a good foundation for the special education should be first laid. The discipline gained and the knowledge acquired in a good public school, will be alike valuable for either. The more of this foundation education, the better. So far as school work is concerned, better by far give a boy a good general education, without any direct reference to agriculture, than attempt to crowd an untrained mind with rules of practice in farming.

There are those who think education for the farmer should consist solely in his acquiring skill in the labors of the farm. Manual skill is of much importance, but if we must choose between this and a broader intelligence as a preparation for farming, we will all choose the latter. The average American farmer is not so skillful a plowman as is the English or Scotch farm laborer, who has done little but plow all his working life. But the American is much better fitted to take charge of a farm. He would sooner learn to do good plowing with a new kind of plow, and in a different soil from that with which he has been accustomed.

A good general education, and especially a good education in the sciences on which agriculture is largely based, need not tend to draw the boy or young man away from the farm. If a farmer's boy learn something of the origin and composition of the soil, of the structure and mode of growth of the plants and animals around him; if he learn that able, scholarly men in this and other countries make these things their chief study, he will be less liable to think of these things as simply the causes of a round of drudgery to him. If he become somewhat informed as to the history and present condition of agriculture in many lands, he will probably be more, not the less, interested in it.

A prominent English farmer said to me that he believed it was a mistake to give farm laborers any school education, as it tended to make them discontented. Do any of us so far imitate him as to say that those who are to be farmers do not need any more than a common school training? Given as good a general education as we can find time and opportunity for, much may be done of what we call technical training. And I want to emphasize the statement that much of this can, best of all, be done at home. A good farm, managed by a father, a relative, or even a stranger, is the best possible place at which to learn the details of farm work. The home on the farm is the place, also, to settle the question of liking or disliking that work. I can only mention a few of the many other means of education for young farmers—such meetings as this, the fairs, the agricultural papers, the books on agricultural topics—all these may have much educational value, if wisely used.

But special schools for training men to be farmers, can also do work in this line. The belief that this is true gave rise to the agitation that secured the legislation under which a college has been established in almost every State, the leading object of which is declared to be "to teach the branches of learning relating to agriculture and the mechanic arts." We all honor Professor Turner, who sits before me, as one of the earliest and most effective friends of this legislation. I need not dwell on the organization of these institutions. Let me caution against a common mistake—that they were designed to be exclusively agricultural schools. The law places the "mechanic arts" side by side with agriculture, and makes teaching the branches of learning relating to these the chief work—not the trial of experiments; not training shops and farms in which trades may be learned.

There has been disappointment at the result of the organization of these institutions. The number of students in them who are expressly preparing themselves to be farmers, is small. This is true in every State; in some in a much more marked degree than in others. There are different modes of accounting for this fact. One is to denounce those who control and those who teach in these colleges as grossly incompetent, or as having purposely "perverted" them from their design. The Illinois Industrial University is a case in point. Through the liberality of nation, State and county it has a large endowment, and facilities for instruction unsurpassed in the State. It is directed by a board, of which two members, at least, of the State Board of Agriculture are leading members It has a large faculty, presumably competent for the work assigned them. It has a large attendance of students, a] majority of them the sons and daughters of Illinois farmers. It has more students in its agricultural courses than are to be found in most like institutions, but only a small percentage of the total number. Among its graduates there are more farmers than members of any other calling, but not nearly so many as we would wish. The charge of "perversion" is freely made against this university. The facts are, that more money is devoted to the agricultural department than to any other; that more men are employed in giving instruction in the subjects directly relating to agriculture, than in any other department; that courses of study from four years to one year, one term, one month, one week, are all offered. The talk of "perversion" I meet with the deliberate statement that no institution in the country, under the land act, is more strictly complying with the letter and spirit of the laws under which it works, than is the Illinois Industrial University.

Another mode of accounting for the comparatively small number of distinctively agricultural students, is to charge that the farmers of the country are ignorant fools, who do not know what is best for them and their sons. It is clearly true that the responsibility rests with the parents and the young men who attend the University. They have a choice, of course, and avail themselves of this choice. Farmers who sent their own sons to pursue other courses have complained to me of the smallness of the agricultural classes. We have just the number that choose to take that course. There are large numbers studying the sciences which are closely related to agriculture; there are many more who, having purposed leaving the farm when they came to the institution, go back to it, than there are cases of students turning aside from an agricultural course after commencing it.

I am not of those who heap reproach on these parents or these young men. Public opinion and action is not always right, but when a large body of reasonably intelligent men continue a given course, there is some reason for it. There is and has been a lack of demand for distinctive agricultural education of high grade. There is a much larger demand for education fitting young men to be engineers, for instance. There is a much greater demand for education looking to the "professions." Why? Chiefly because, in the past, there has been little need felt of such education. The conditions under which agricultural work has been done in this country have been on the whole wonderfully favorable. Never in the history of the world has there been more rapid accumulation of wealth and the comforts and luxuries of civilization than in this country, and especially in the Western States. With fertile soil, with lands practically to be had for the asking, with favoring legislation, with constantly widening markets—it has been the rule that any man of fair intelligence and energy should make a reasonable success in farming. Tens of thousands of poor, uneducated foreigners have accumulated wealth in the business. With the price of lands rapidly advancing, the main business of many farmers has been to buy and hold large tracts of land.

The agriculture of this country has been good—for the circumstances. Much praise is to be given to American farmers. With wonderful skill they have adapted themselves to their surroundings. The methods for which they have been criticised have often been the very best under the conditions in which they found themselves. But these conditions did not require scientific training in any degree. It has not been true in the majority of cases, that money could be made more certainly or more rapidly in the West by a farmer trained in "agricultural science" than by one who had only good general intelligence and shrewdness. It has not been unnatural that men should have been slow to spend time and money in acquiring the knowledge for which they did not see a direct need. The unusual demand for educated men in other callings, has also had its effect.

Even in the past, it would have been much better if farmers could have taken time for broader training. But we have not all come to value knowledge and intellectual training for other uses than as aids in money making.

Our country is now in a transition stage—from the new to the old; from the pioneer to the old settled stage of civilization. Our farming is changing. In the future lands are to advance in price less rapidly than they have in the past. The main reliance for profits in farming is to be the farm products. Competition, at home and abroad, is generally increasing. The enormous immigration, a large part of which goes to the farms, is greatly increasing this competition, to which each American farmer is subject. Each succeeding year of average crop gives a larger surplus for exportation. It will become a serious question where we are to find profitable markets for our surplus products. The farmer who is to "make money" must produce more or better crops than the average. Common farming will not pay as well as in the past. There will be vastly greater need of training for the business—general and special training.

But if the difficulties are to be greater, the rewards will be worth more. Success in farming will not be so much the rule, but success will be worth more. The love of land and land-owning will increase. The owner of a good farm fifty years from now will be ranked higher than now. Public opinion finally shapes itself right, but it is often long in seeing truth. That parent or that young man who makes best preparation for these changed conditions, of which we but see the beginnings, will reap a rich reward.

We must remember that the standard in education is steadily advancing. The time was when he who could read and write was counted "learned." The common school education of to-day covers more ground than the liberal education of some ages. The training counted sufficient for the farmers of the present will not be adequate for those of the future.

Though progress in agricultural education has been slow in some respects, there is no ground for discouragement. Despite the misunderstandings under which they have worked, the agricultural colleges of the country have done much good. Chief of all, they are prepared to supply the demand for agricultural education when the farmers of the country come to see that such education "will pay."

GRAPES AND WINE.

BY

COL. ADOLPH ENGLEMANN, SHILOH, ILL.

READ AT FARMERS' INSTITUTE, BELLEVILLE, MAY 17, 1882.

Grape culture has been practiced as early in the history of mankind as we have any record; the Bible tells that Noah, after the flood, planted a vineyard; and an apocryphal tradition says that the Lord had given the vine to Noah, and told him how to cultivate it and to make wine; but the Bible makes no mention of this; so it is probable that Noah was acquainted with grape culture even before he entered the ark, and that grapes had been cultivated for generations before the flood. The Jewish spies that entered Canaan brought back a cluster of grapes, which they had cut on the brook Eschol, that was so heavy that two men had to carry it on a staff between them. With the ancient Greeks, centuries before Christ, grape culture and the use of wines were common. We can see from the New Testament that in Christ's time the use of wine was quite common with the Jewish people, and about the same time the Roman Columella wrote a book on pomology and grape culture, which may be perused with profit by the horticulturists of to-day.

It is probable that the first grapes were soon after planted by Roman colonists at Bacchi-Ara, or, as it is now called "Bacharach," on the Rhine, although grape culture only became general in Germany by decree of the Emperor Charles, "the Great," more than 800 years later.

Grape culture is now quite common in the temperate portions of Europe and Asia, and in northern and southern Africa, but in all these countries they heretofore had but one species of grapes, the Vitis Vinifera, it is true in thousands of most excellent varieties. In the United States bountiful nature has provided at least nine distinct species, each of these species capable of being developed into as many varieties of luscious grapes as now exist of the Vitis Vinifera. Of our American grapes, the Labrusca has probably thus far been developed into the greatest number of cultivated and valuable varieties, of which I will only mention the Concord, Catawba, Creveling, Iona, Lady, Maxatawny, Duchess and Worden. Next the

Æstivalis has given us the greatest number of varieties, as the Newton, Herbemont, Cynthiana and Delaware. Only recently the Ripara species has been brought to the notice of the grape culturists, but a number of its varieties have already attained to great public favor, as the Taylor, Noah, Elvira, Amber, Faith, and others.

In our southern States the Rotundifolia is being cultivated and also found wild in many varieties, principal of which are Scuppernong and Muscadine. The other species are also receiving the attention of cultivators, and will, before long, be cultivated in numerous, valuable and distinct varieties; thus it will be seen that in the numerous species of grapes we possess, and their capability of being multiplied each into thousands of varieties, the American grape culturist finds wonderful possibilities before him. Wonderful possibilities! but fortunately also some probabilities, of success.

Our grape culture still to a great extent is experimental. The principles on the application of which success in this business depends, are not yet all known; our experience in the cultivation of our native grapes dates back little more than half a century, whilst on the Eastern Continent they have the experience of thousands of years, delivered from father to son, and laid down in many valuable books of ancient and modern date, and of late in a numerous and valuable periodical literature, devoted exclusively to grape culture: Vineyard culture of the native grape has not been practiced with any success longer than about forty years, when the first encouraging results were attained with the Catawba. The Isabella, Virginia, Bland and Herbemont had been planted for many years, in a small way, in gardens, with varied success: it is also reported that the Swiss at Vevay, Indiana, planted, some sixty years ago, the Cape grape to a large extent, but with such poor success that, at the present time, the Cape grape is hardly known by name even to the grape culturist.

The history of vineyard culture in the United States, previous to the introduction of the Catawba, is a record of continued failure. At first the native grape was considered too inferior for cultivation, and numerous attempts were made to cultivate the European grape, all of which proved speedy and complete failures, owing to the inclemency of our climate and the ravages of the phylloxera. The Vinifera will be killed by cold that brings the mercury to zero; fortunately for us, many of our native varieties can stand and outlive 24 degrees of cold below that point. The Catawba, however, does not belong to these hardy varieties, 22 degrees below zero being sufficient to kill all its fruit buds, whilst it is also liable to mould in the leaves and tender branches, and to rot in the berries. Owing to these causes, the cultivation of the Catawba has, in most cases, proved unprofitable, and I am confident that at the present time only one-third the number of Catawba vines are in cultivation that were planted thirty years ago. Yet some cultivators have all the time adhered to the Catawba, and have succeeded in most years to raise fair crops, and to convert it into excellent wine, which they have always been able to sell at remunerative prices. Prominent among the successful cultivators of the Catawba is our fellow-citizen, Mr. Valentine Huff. The varied results attained with the Catawba are instructive. Grape culturists in Missouri insist that the Catawba, as well as the Concord, and, in fact, all Labruscas, will bear only a few profitable crops, when they will become so liable to rot as to be absolutely without any value. The experience with us is different. I have a piece of Catawba vineyard planted in 1846, consequently now thirty-six years old, which always bore fair crops, if it had not been injured by excessive cold in winter or wet in summer, which again promises a good crop this season. The Labruska, being a native of the Atlantic slope, seems, from these experiences, not to flourish west of the Mississippi river; but not only with us, but also on the banks of the Ohio, large Catawba vineyards have been dug up as unprofitable, whilst others not far away have been continued with success. This would go to show that not only geographical position, but also the composition of the soil, and probably other local causes, influence the grape.

Whilst the Missourians disclaim against all grapes of the Labrusca species, they seem to be especially successful in the cultivation of all varieties of the Æstivalis, the principal varieties of which were first successfully cultivated in Missouri.

The Æstivalis, in many varieties, is found growing wild in most of the States of the Union, and can probably be cultivated with success over a greater extent of territory than any other species of grapes; yet it, too, like the Labrusca, and, without doubt, all other species of grapes, depends, for its successful cultivation, on local qualities of soil, the nature of which is not yet understood. I know a skillful grape culturist who, stimulated by the success he had in the cultivation of the Norton's Virginia, extended his plantings of that variety. Within 200 yards of the flourishing and productive old vines, his new plantings made but a feeble growth, and never set fruit enough to pay the tenth part of the labor bestowed upon them. A chemical analysis of the soil might solve this riddle, but I am not even sure of that. I would advise people that want to plant vineyards to go slow about it; let them select a high, sloping ground, and plant a variety of the most hardy grapes, selected, also, as to quality, and after an experience of from eight to more years they will be able, intelligently, to enlarge their vineyards. They should also, at the outset, inform themselves of the most successful modes of cultivation. I find that too little regard is given to the fact that not only each class, but also each individual variety, and even the different vines of the same variety, require distinct treatment, according to the vigor of their growth, hardiness in winter, and ability to resist mould and rot in summer. The grape, in this respect, is much like the horse. The common plug horse may stand a good deal of cutting and slashing, which, with a blooded animal, none would be foolhardy enough to attempt. So the Ives and Concord grapes will yield returns under very crude treatment, whilst the Herbemont, Catawba and Taylor, and many others, require more careful handling.

I have read an article in an agricultural paper, purporting to give directions for pruning vines. The direction for selecting canes to be taken for bearing fruit were good, and it went on to say: "See that you get enough to cover your trellis." This reminds me of the fable of Procrustes, who infested some highway with two bedsteads—

a large and a small one. If a tall man came up, he put him in the small bed, and cut off what extended beyond: a small person he put in the large bed, and stretched him until he became the length of his bed. This was cruel to the wayfarer; and the direction to make the vine cover the trellis is cruel to the vine. Like a convenient bed, a trellis should always have some room to spare, and vines should be pruned, not by the size of the trellis, but according to their habits of growth. Rank-growing vines should be cut back sparingly, whilst a feeble grower wants to be pruned very close, lest it set more fruit than it can mature, whilst the rank grower, if cut back in the same proportion, will set but little or no fruit. You will find the physiological principle which produces this effect to hold good in all organic structures. The proper pruning of vines depends not only on the manner of their own individual growth, but also, and to a greater extent, on the general habits of the variety and species they belong to. All Labruscas, Vinifera, the hybrids of these, and the large-berried varieties of the Riparia, should, in pruning, be cut back to one quarter or even one-fifth of the bearing wood they made the preceding season, whilst the Æstivalis should not be pruned more than to leave them at least one-third of the bearing wood, and the Cunningham, and others of that class, require one-half or more of the bearing wood, and the Taylor, of the Riparia species, should never be reduced more than one-half.

One of the most difficult questions to solve is: How far apart shall we plant our vines? If we plant too far apart, there will be a waste of land, of trellis, and of cultivation, and if we plant too close we endanger the fruitfulness of our vines, and will invite mould and rot of their leaves and berries. So if we err in the matter of planting, we had better err in planting too wide apart, and have fine vines and fruit, having been careful to prune them in the proper manner. To know how far apart we should plant, we must not only know the habits of the varieties we plant, but also the effect of our soil upon their growth, which is markedly different in different soils on different varieties.

Last fall Mr. E. A. Riehl, for the "*ad interim* committee of the Illinois Horticultural Society," visited my vineyard. He was surprised at the large size of my Cunningham and Taylor vines, and the puniness of my Elviras, which differed largely from the relative size of these vines elsewhere. It is also of the highest importance what varieties we are to plant, and here, also, we can only find out by trying which will do the best on our land. The Concord will probably thrive in most places east of the Mississippi, and its rather foxy fruit is liked by most people, although better grapes would be preferred, if they could be had as cheaply. The Martha is a handsome and healthy grape, but no better than the Concord. The Cottage is also a healthy and productive grape, sweeter and less foxy than either of the former. These, in rows from six to seven feet wide, should be planted from eight to ten feet apart. The Lady is an earlier and better grape than either of the foregoing, but less productive; seven feet apart is sufficient for it. Ives and Renz are of quite inferior quality, though very productive. It is to be hoped that we will soon get choice varieties of the Labrusca, that will be as productive and hardy as the two last varieties mentioned. The

Vergennes, Duchess and Pocklinghton come highly recommended, but I cannot as yet speak of them from my own experience. The Catawba, Creveling, Iona, Maxatawny and Adirondac are very good, pure, native Labrusca, but as difficult to raise as most of the hybrids between the Labrusca and Vinifera, of which we now have hundreds. Of the hybrids, I would recommend only Massasoit and Herbert, and these should have about ten feet space in the rows. Of the Æstivalis, the Norton and Cynthiana are rather hardy and healthy, requiring about twelve feet space in the rows. The cold of the winter of 1880 to 1881 was rather too severe for the Norton, so last year it bore only a light crop. Herbemont, Baldwin's, Lenoir, Lincoln, Devereux, Cunningham, Rulander, and Louisiana are very choice grapes, but need careful protection against the cold of winter, or they will bear but very irregularly. Herbemont and Cunningham will require fifteen to twenty feet of space in the rows, but the other Æstivalis mentioned will only require about twelve feet. The Delaware, which I consider also as an Æstivalis, is quite hardy in winter, but is liable to lose its foliage in summer. Its quality is of the best, but it is so shy a bearer, and so frequently fails to ripen its fruit, that it is not generally considered profitable to cultivate; from six to seven feet will be space enough for it in the rows.

The Raparia species of grapes has of late years attracted much attention; of this species the Clinton has been the longest in cultivation, but its quality being only second rate, it never became a favorite. Then the Taylor was brought before the public. Being a white grape, very rich, both in acid and sugar, it became a great favorite with wine-growers for these qualities. But with most of them it proved so shy a bearer that it was soon again dug up. With me the Taylor is still a favorite; it stands the coldest winters, and by giving it ample space it will bear fair crops every year. I planted it eighteen feet apart in the rows, and by pruning very lightly have got as much as forty pounds of grapes from a single vine. Several seedlings of the Taylor are highly recommended, principal of which are the Elvira and Noah, both very hardy and productive white grapes. Of the Elvira a great many seedlings have already been obtained, but I can not speak of them of my own knowledge; six to seven feet is enough for the Elvira, whilst the Noah requires eight feet or more. The distances for planting mentioned here, are those adapted to my soil, but different soils may require these to be materially modified.

Many of our cultivated grapes were originally taken from the woods, as the Catawba, Norton's Virginia, Racine and others, and few indeed are more than three generations removed from forest life. In the Catawba, Creveling, Iona, Lady and Maxatawny we have instances of the excellence to which Labrusca may be developed. The Æstivalis, the botanical names for the specials of grapes popularly called "Summer Grape," have given us most excellent varieties, which can challenge comparison with the choicest European grapes. The Herbemont and Baldwin's Lenoir are instances of this excellence, and prove what a promising field is open to us in the improvement and development of the wild grape that fills our woods. We must not, however, deceive ourselves as to the ease with which new valuable varieties may be originated; of all seedling vines planted, a large proportion will bear no fruit, as they have only male blossoms. The fertile grapes all have both sexes united in them. I have conversed with distinguished botanists on the subject of grape blossoms, but there seems to be no instance recorded in which a vine was found to be bearing female blossoms only. The Æstivalis is more prone to produce only male plants than any other species of grapes. I think their proportion to the fruitful vines raised from seed will be found fully one-half. The seedlings of the Labrusca are more frequently fertile; as to the Riparia and Candicans I have too little experience to give their proportion of fertile to unfertile vines, but have had seedlings of both these species with only male flowers. But the liability of seedling vines to bear only male blossoms is not the only difficulty encountered in the attempt to produce new varieties. Of a thousand fruitful seedlings, the probability is that nine hundred and fifty will be inferior in quality to the grapes from which the seed was taken; forty-nine may be somewhat like the parent, and the cultivator can call himself fortunate if among his thousand seedlings there is one which proves to be an improvement on the parent grape. The great difficulty in producing new varieties is found in the tendency of seedlings to revert to the crudest type of their species. Yet notwithstanding this difficulty in producing valuable new varieties, hundreds are annually advertised for sale, being more or less highly recommended by various persons and offered to the public at from $1.50 to $4.00 a vine. To plant all these, the means of a Vanderbilt would be required. All a man of common means can do is to wait a number of years, until the new varieties have become cheaper, by which time disinterested parties will have expressed an opinion of them in the horticultural papers, by which selections for new purchases may be made. I rarely buy more than a single vine of any kind, and if on trial it seems to me promising, I can soon have as many plants of it as I can care for, either by grafting or by raising vines from layers and cuttings. I am not a very sanguine grape culturist, and cultivate barely four acres of grapes, but have now about 100 varieties in cultivation, of which 80 have borne fruit. As I never planted much at a time, I have never had to dig out many vines. I adhere closely to the advice which I have given, to "go slow in planting grapes," and I could not, from all my experience, which commenced in my early youth, advise anybody to plant largely of any varieties excepting the Concord and Cottage for market, Norton, Cynthiana and Martha for market and wine, and the Taylor for wine only.

MANURES AND THEIR APPLICATION.

By Jos. E. Miller, Belleville, Ill.

Read at Farmers' Institute, Belleville, May 17, 1882.

The assertion that a farmer's education is never finished, is particularly applicable to that part which has for its object the retaining or increasing of the fertility of the soil. This great question of "soil fertility" has at all times confronted the tillers of the same, and in all probability will continue to do so, as long as the nations of the earth will continue to subsist principally on its products. Although experience and agricultural science have carried us well forward toward the attainment of the desired end, yet we are still far from having a royal road,—and on account of the great difference of seasons, soils, crops, and other unavoidable circumstances, it may with safety be predicted that it will never become one of the exact sciences. But keeping up fertility and raising heavy crops does not of itself constitute successful farming; to make it profitable, we must raise the same at an expense that will leave us a fair profit on our labor and money invested, after the crop has been marketed.

Especially in the West, where labor is high and produce comparatively cheap, does this question demand careful consideration. Therefore, in feeding the crop—like any living animal—we must endeavor to apply nothing that will tend to increase the cost of production above the value of the matured article, also nothing not needed,—and what we do apply, apply in such manner, at such time and in such quantities, as is destined, as far as we are able to judge, to produce the best possible results. There is no subject connected with agriculture about which there exists a greater conflict of opinion, than about this very matter, and in nothing else, for the want of the most rudimentary fact, is every well-established principle of agricultural science more daily violated.

Continued cropping without returning to the land that substance which really produces the crop, is bound sooner or later to exhaust the soil and render the tilling of such no longer profitable; but so long as immense tracts of new and fertile lands can be had cheap, or a material failing in the fertility of lands under cultivation has not become apparent, this question will not receive the due consideration its great importance demands. With us the temptation is too strong to reach out for broader farms, and to make the increased acreage do for us what we should do by increased culture. The great perfection of agricultural machinery for large-scale culture seems but to add to the rapidity with which the soil is being devastated. The experience of other countries is being repeated in ours, and the old and ever-recurring question is upon us, of maintaining profitable productiveness by means of systematic culture and returns to the soil. Duty demands our best work to produce the best results on our farms, and that we keep them up to their best capacity of production,—and to do this good tillage and plenty of manure are essential.

Instances happen daily, where the careless and slovenly farmer, after having impoverished his land through neglect and misuse, turns it over to his successor, who, while he is restoring its fertility, is at the same time getting satisfactory and paying crops from the same. Here is a lesson to be learned, and the question arises, "How is this done?" The answer generally is, "*By good management and plenty of manure.*" But in this case we must let the term "manure" comprise everything that tends to increase the growth of the crops, although no fertilizer in itself—such as good tillage, draining, summer-fallowing, and a judicious rotation of crops.

Manure is the foundation of all good husbandry, and, next to labor, the great element of prosperity to the farmer, and as regards its action, may be divided into two distinct classes, viz: those that add fertility directly, and those that act in an indirect manner—such as rendering fertilizing matter, locked up or lying dormant in the soil, available or attracting others from the atmosphere. They may again be divided into organic and inorganic manures, of which mention will be made hereafter. Through long and expensive experiments and chemical investigation, it has been shown that our cultivated crops need several different substances to make the best growth—the principal among these being, phosphoric acid, nitrogen, potash, and lime; some soils are perhaps deficient in one of these, others in two or three, or perhaps all of them. All soils contain the different elements of plant food—they differ only in the proportions and in the degree of their availability, and the trouble is to find out exactly what is wanted. Chemical analysis cannot be depended upon—it is at best a costly and defective source of information. Different parts of the field will show a different analysis, and the analysis does not show whether the ingredient is in a condition to be used by the plant. The quickest and only way to find out the needs of a particular soil is by actual experiment with different fertilizers and crops and mode of treatment. Also, the physical condition of the soil may be such as to materially affect for good or ill the action of the fertilizer, and thus the formula—fine as it may appear in theory—will be far from being economical in practice. What is true of one manure in a particular soil or season, may not be true of another, or even the same under different circumstances; and different experiments often lead to different results—something not strange, when we reflect upon the great variety of conditions involved. Nothing but experiments can acquaint us with the character of our soils, under our varied and diversified seasons.

Although it has often been remarked that the industrious and energetic farmer will prosper and grow rich when the mighty philosopher will starve, yet the often much abused scientific farmer uses his brains as well as his muscle; he has his reasons for this or that; he knows how he plants, feeds, and what is required by the different crops, and what fertilizing elements are contained in the different manures, and how they act, and can therefore make his experiments intelligently, in the light of scientific knowledge and investigation. He will not experiment first with those manures that science tells him are already abundant in his soil, neither will he be likely to apply tons when only a few hundred pounds is needed. He knows that there is no virtue in manure on lands that are continually wet. In short, he studies in the great school of nature, explores her hidden secrets, and is conversant with her teachings.

In the great West, where land and farm products are both comparatively cheap, and prices of concentrated or commercial manures are high, it hardly pays the farmer to use them on his broad acres, but no doubt the time will come when a change of existing circumstances will make it necessary, and that at no distant day. For the present, he ought not to go off the farm to obtain manure; his sole reliance for the bulk of his crop should be clover, plowing under green crops, and stable yard manure, patching out in spots with such other manures as can be obtained cheap enough to warrant their use.

"Clover," says John Harris, "is the great renovating crop of American agriculture." During the growth of clover a large amount of nitrogenous matter accumulates in the soil, hence the great value of clover as a fertilizer. There is, perhaps, no other plant in the world of such value to the farmer for this purpose. It furnishes shade for the soil during the fierce drying heat of summer; its leaves are continually falling, and soon form a delicate covering for the entire soil, easily penetrated by the air, and enable it to receive those atmospheric elements that are to enrich it. It further does not, like most manures, impart fertility in spots, but to the entire soil, which becomes renovated throughout. According to experiments made by Dr. Voelckler, the crops derive more benefit when the clover is cut for hay than when pastured off by sheep and other animals, and more by being cut twice than only once, and still better results are derived from the clover being allowed to go to seed than when cut for hay, because the developments of the roots are checked; the same is the case, but to a less extent, by cutting green for hay, while, if allowed to ripen, the roots are stronger and more numerous, and more leaves fall to the ground; in consequence, more nourishment is left after clover than after hay. This fact should also be a further inducement for us to raise our own clover seed, instead of getting it from other States. The rank growth further makes it a valuable crop for green manuring by plowing under, when it has these effects: It gives vegetable mould, the roots bring to the soil plant food out of the sub-soil and the acids produced when the decay is going on, aid in dissolving the mineral parts of the soil. After a crop of clover has been raised it should be fed on the farm. Every farm should have' its herds of improved cattle sheep and swine. Improved culture, with improved stock, must solve for us the fertility of the soil. In our Western farming, they must go hand in hand, as one is conducive to the other. We must concentrate more of our crops into meat, and leave the residue on our *farms to enrich the land and enliven it for future crops.* We want more *good beef, butter, cheese, etc*, and at the same time larger crops, for in good stock and crops we often find a profit where we otherwise find none. Grass and clover, cut and fed to stock, and the manure applied to the land, will produce as good or better results than if the original crop had been plowed under, and gives us the extra profits from the stock, as well as a soluble manure, in better condition to be assimilated by the growing plants. According to the extensive experiment of Lawes & Gilbert, the value of the droppings of different animals, as a fertilizer, is in proportion to what has been fed, and the manure produced from any kind of food is worth a large percentage of its first cost, ranging according to the circumstances and locality, so that in selling our crops we are at the same time sending away the fertility and getting nothing for it, as we only get pay for the amount of nourishment, as food, contained in the same. Indeed, it is largely to the feeding of cattle and sheep for beef that the English farmers owe the fertility of their highly productive lands. With us, next in importance to clover as a fertilizer, is stable yard manure.

The manure pile has, with a good deal of truth, been called "the fountain head of benediction," but, with us, has not yet been duly appreciated. It is a complete fertilizer, safe and useful everywhere. If a farmer can get all the good barn-yard manure he needs, that is enough. There is nothing in the long list of commercial fertilizers which gives so good a return for the money invested in it as well made stable-yard manure. Nothing whatever that can afford plant-food should be wasted; the wise and provident farmer should be continually accumulating manure. It is astonishing how much that is generally allowed to go to waste about the farm may thus be converted from a disease breeding nuisance, into a source of health, pleasure and wealth. A good manure is usually estimated by its ability to yield ammonia, and this substance, arising from certain vegetable, and all animal, decomposition is its very essence, is readily dissolved in water, and as promptly lost by drainage, or by evaporation into the air under the heat of the sun and exposure to rains. It is safe to say that at least 50 per cent. of the value of manure is lost by exposure to the weather; and an analysis made by Prof. Way, of England, shows that the value of the covered manure is more than double that of the uncovered. However, in a well managed heap, very little ammonia will escape, and if well fermented, will be in prime order for use. When animals are allowed to run loose in the stable, the best plan is to leave the manure in the stable until spring; in this manner the liquid excrements will be saved, which will, at the same time, prevent the mass from heating or becoming fire-fanged. When this is not practicable, a shallow cemented cesspool, cheaply roofed over, will prove the most beneficial; this will hold the liquid manure which may be drained into it, as well as the solid excrements. And it may be so located as to receive the drainage of the stable yard. The manure may be dumped in from a cart, and be again loaded with a horse-fork.

Do not throw your dead chickens, pigs and other small animals that die on the farm into your neighbor's yard, but bury them in this manure heap, where they will be converted into a very superior concentrated fertilizer. The liquid manure may be called the "double-distilled essence of fertility;" it is far more efficacious than the solid excrements of the animals, quicker in its action, because all the elements are in a soluble state, and are more evenly distributed. To use, take sprinkling cart, or mix with other manure, or other material, and scatter. Care should be taken not to let the stable manure become overheated, for then the most valuable part of the nitrogen is driven off, although the mineral elements remain. A good plan is to make all the manure possible upon the farm, and piece out with such commercial manures as experiments and experience prove profitable. Should any soil be deficient in only one, or perhaps two, of the leading elements of fertility, it will no doubt be cheaper to apply a few hundred pounds of the same than to use tons of barn-yard manure. And the latter may be used on such places as need all the different chemical elements that it contains. But if the essence of it is allowed to drain away, only the dross is left for the farmer to haul upon his fields.

LIME

is an essential ingredient in the soil, being constantly needed by the plant in all its parts, and may always be profitably added, wherever it does not already exist in the soil in sufficient quantities. It invariably proves beneficial on drained lands, but not on land that is wet, and aids greatly in the decomposition of organic matter in the soil. Upon heavy clay soils, its effects are most marked; the particles lose their adhesiveness, and allow air and water to enter. Therefore its value does not consist as much in merely supplying an actual constituent of the plants; if it did, a very small quantity to the acre would be sufficient; its chief value, as already stated, consists in changing the chemical and physical character of the soil, in developing the latent mineral plant-food, and in decomposing and redeeming available organic matter. Often good results are obtained from the first application, but future dressings fail to have the same effect. In these cases, green crops should be plowed in, or other manures used, when lime may be again used with good effect. Hence we see that, although it increases the crop, it will bring about the early exhaustion of the land unless plant-food is again added. "Therefore," says Joseph Harris, "it is better to enrich the land on general principles, by using ammonia and phosphates more liberally in manures rather than develop them out of the soil with lime." As regards application, the samê author recommends the use of smaller quantities and oftener, as in this, like every other manure, the increase of the crop does not keep pace with the increase of manure applied. This will avoid waste from leaching through the soil. Have it well slacked and pulverized before applying, and scatter from wagon with a long-handled shovel, and leave on the surface. It should not be mixed with the manure pile, as it tends to liberate the ammonia contained in the same.

WOOD ASHES

are, for many soils, a complete fertilizer, supplying all plant food except nitrogen, and by their action rendering other materials in the soil valuable. Their effect is lasting, and it may with truth be said that the land never forgets ashes. Although some other fertilizers are more rapid in their action, their effect is soon gone. They may also be used in the manure pile for composting. Their quality depends on the kind of wood used, and unleached ashes are several times more effective than leached ashes, because the latter contain no readily soluble potash, wherein the principle value of wood ashes consists, which, in some form or other, seldom fails to have favorable effects. The advantages they have over other mineral manures is, that they contain all the organic constituents of plants, besides giving back to the soil the mineral elements which are soonest exhausted. Apply to root crops, cabbage, fruit trees, tobacco, etc., forty or fifty bushels per acre of unleached ashes, and several times that quantity of leached ashes may be considered a fair application.

PLASTER OR GYPSUM

is usually more effective on dry limestone land than in any other; very useful for clover, corn, potatoes, peas, and sometimes for barley, grass and wheat. The best time to use is in the spring, from two to three hundred pounds per acre. Like lime, it contains little plant nourishment in itself, but helps to render those in the soil available. The same may be said of salt as a fertilizer, of which we hear so much of late; it exerts the same chemical action. It has an indirect action in enabling the plant to take up silica and strengthen the straw, and may increase the crop for a single year, yet it will tend to exhaust these sources of the soil.

BONE DUST

is particularly useful for root crops, grape vines, etc., and pastures are much improved by it. Its action is not always immediately apparent, but afterwards often visible for many years. It is good for any crop, and it is a good plan to mix it with the manure pile. It is often adulterated with plaster.

As far as commercial, artificial, or concentrated manures are concerned, I feel justified in saying that the farmers of our State are not yet ready to adopt their use in a general manner, owing, principally, to the low price of produce, and the high price of these fertilizers, and their use may also be more easily dispensed with on account of the original fertility of our soil. The coming farmer will avail himself of the discoveries of science and use more artificial fertilizers. In their use we want science to help us, for we cannot afford to ignore teachings, experience and observations, and use these costly chemical productions at random. Some of the artificial manures contain all the important chemical ingredients needed in the soil for growth of the plant; these are called complete fertilizers. Others contain only one, two or three, and are intended to be applied to such crops as have them largely in their composition, or on lands that are deficient in only these. Therefore, it is a waste of money to apply a complete manure where potash only is needed, and it is equally useless to apply ammonia where only phosphoric acid is needed to produce a paying crop. But unless the special wants of any given soil are well understood, well made barn-yard manure is much more reliable than any special fertilizer. A formula for any crop, to fill all cases economically, is simply out of the question, and must remain so, so long as soils and seasons continue to differ; and no experienced agricultural chemist will at present advocate the doctrine of special manures. But, with the right materials in the right place, chemical farming is a profitable business. In short, the true office of concentrated manures is to supply one or two ingredients that may be deficient in the soil; when these are known, their use is recommended. But the wants of the crops to be raised must be taken into consideration as well as those of the soil; they, too, contain the different chemical ingredients in different proportions. And the different plants also have different capacities of obtaining food from nature. So that the plant food necessary for one kind of crop is more or less useless to sustain the wants of another. For instance, wheat requires phosphoric acid, ammonia, potash; bean crops require phosphoric acid, potash, ammonia; root crops require ammonia and superphosphates. Commercial manures should be used only on crops that pay for their use the first year. For the better the manure the less effect it has after the first crop.

We cannot hope to keep our farms fertilized with chemical manure alone; there must be barnyard manure, clover and lime, and the more of them, the more of the concentrated manure used. Chemical manures, says Prof. Hilgard, enrich the father, but impoverish the son. It has become a wide-spread belief that the effect of these fertilizers was to aid the plant to use the more available stores of plant-food in the soil, until these have become so exhausted as to no longer respond to the stimulating action of the special manures. They have no effect on wet land; the nitrogen lies dormant; hence the necessity of previous drainage; this will allow its disintegration, which will allow the introduction of the air, when the oxygen will decompose the organic matter and make it available. In the matter of procuring reliable fertilizers we further want science to help us, for large sums are annually lost by buying such as are, perhaps, good of their kind, but do not contain just the element wanted, and other large amounts by not getting the elements paid for.

But, to get the best effects from any kind of manure, good tillage and a judicious rotation of crops are essential. The celebrated experiments of Lawes & Gilbert, conducted through a long series of years, afford conclusive evidence on this point. This may be explained from the fact that, while some crops feed near the surface, others draw their nourishment from the depths of the soil; some plants search for one chemical ingredient, and some for another;

therefore, a good rotation is as much needed to preserve the even fertility of the soil, as to keep it mellow and free from weeds.

In conclusion, I will say a few words on the general application of manures, wherein there are three leading objects to be considered: First, to apply them so as to preserve as much as possible from loss before or while being appropriated by the crop; second, so to apply it as to produce the highest action of the manure; third, so to apply it that the action may be felt at the proper time. Manure, when placed in the soil, undergoes loss from two causes: first, from the escape of its volatile matter into the atmosphere, and secondly, by being washed or leached through the soil. Manures are of two kinds: first, inorganic, such as contain no volatile matter; second, organic, such as contain a large proportion of gaseous matter, which, when released by decomposition, escapes into the atmosphere. The first is liable to no loss but that of being washed or leached through the soil, while the second will lose more by the escape of its volatile, or most valuable matter, through the air. Soils, rich in vegetable matter, will absorb or retain a large proportion of volatile matter, while barren and porous soils have little power of absorption; and, according to Prof. Liebig, very little fertilizing matter is ever washed through a good soil. These and other facts already produced, tend to show that manures always operate to better advantage on lands already having a good proportion of fertility, than on more barren soils. This should teach us to feed our soils before they are hungry, and we see the theory of the "ounce of prevention" most strikingly verified, and the economy and supreme necessity of keeping up the original fertility of our land made apparent to every thinking farmer, because this can be done much more easily and more economically than to restore it after it has once passed away.

For reasons above given, I would consider it a good practice to place organic manures upon or near the surface. And that organic manure, all animal and vegetable matter, should be incorporated with the soil. And while rough manure should be put out early, highly fermented or soluble manure should be put out as late as possible.

The National Norman Horse Association.

By J. BUTTERWORTH, Quincy.

The National Norman Horse Association was organized at a meeting at Chicago, Feb. 9, 1876. Mr. Ellis Dillon was elected President; Vice-Presidents, Secretary, Treasurer and a Board of Directors were also elected. Constitution and by-laws were adopted, limiting membership to importers, breeders, and owners of Norman horses. The following resolutions were adopted:

Resolved, That the Norman, the Percheron, the Picardy and the Boulonnais horses are substantially the same breed, and should be known as and called the Norman horse.

Resolved, That the copyright of the stud-book shall be the property of this Association, and that the management and conduct of its publication, as well as the fees for registration and the price of each volume, shall be under the control of the Board of Directors of this Association.

The Board of Directors of this Association, at a meeting Feb. 21, 1877, adopted the following resolution:

Resolved, That the chairman appoint a committee of three to collect the proper material for the Norman Horse Register, and contract for the printing of the same.

Messrs. Virgin, Fuller and Sterrett were appointed said committee, and the first volume has been published, with a valuable history of the horse, and the Norman horse in particular.

The importers and breeders of Norman horses in America, being the pioneers of the great draft horse interest that has spread all over the land, knowing that next to a good horse is a good pedigree, have determined to establish a Register for recording all good Norman horses, that in future they may know definitely their value for breeding. A grade may look as well, but not breed as well, as a full-blood; hence it is that a pedigree is an element of value in all our improved breeds of stock.

In France, the home of the matchless draft horse, they have kept no stud-book, but have been bred in their purity for hundreds of years. Their extensive importation to this country, and their successful breeding here, with so many different breeds of horses, induces us to provide a Register for recording all full-blooded horses, and sifting out the grades for the benefit of the purchaser, the breeder, and the importer. The value and benefits of pedigree in all our improved stock is now conceded.

To successfully maintain and publish a Register, the importers and breeders must maintain an active working Association. Such we desire shall be the National Norman Horse Association, organized in 1876.

They have copyrighted and published the first and second volumes of the National Register of Norman Horses. It is imperative that an association should control the publication of the Register or stud-book, and not have it subject to the caprice and profit of any one individual.

The controversy about the name is now practically settled by the importers and breeders, who almost unanimously call all the French draft horses Normans, which is the correct and only proper name.

In the publication of the National Register of Norman horses, we have the coöperation of nearly every importer and breeder of French draft horses.

No legitimate breeder or importer can afford to leave them out, as the masses of intelligent buyers now insist on buying none but horses recorded in the National Register of Norman horses, published by the Norman Horse Association. Stud-books or private catalogues are of no value unless backed by the Association.

Great credit is due to Messrs. Dillon, Perry and Farlow, as the executive committee appointed by the importers and breeders of Norman horses as members of this Association, to publish the history of the Norman horses, which they have done at large expense. They have collected, by diligent research, all the available history from the most reliable French authorities concerning the French draft horses.

The Register, published with it, of over 1,000 imported and native full-blood Norman horses, is a grand start in the publication of the record or stud-book, and it shows the importance and demand for such a Register.

MEMBERSHIP.

The subject of what constitutes a membership was presented, and it was decided that membership in this Association should be confined to importers, breeders and owners of Norman horses, full-bloods or grades. The membership fee is one dollar.

OFFICERS.

(Elected Nov., 1882.)

President—John Virgin, Fairbury, Ill.

Vice-Presidents—Jas. A. Perry, Wilmington, Ill.; Horace Babcock, Onarga, Ill.

Secretary—T. Butterworth, Quincy, Ill.

Treasurer—Edw. Hodgson, El Paso, Ill.

Committee on Registry—Elmer Hull, Buckley, Ill.; Isaiah Dillon, Bloomington, Ill.; J. C. Morrison, Pontiac, Ill.; Horace Babcock, Onarga, Ill.; Martin Hodgson, Ottawa, Ill.

Board of Directors—H. C. Hefner, Paxton, Ill.: T. Skillman, Petaluma, California; Ellis Dillon, Bloomington, Ill.; Chauncey Bailey, Downer's Grove, Ill.; W. E. Pritchard, Ottawa, Ill.; James M. Rexroat, Macomb, Ill.; G. W. Winters, Westville, Ind.; Albert Farlow, Minnesota Junction, Minn.; H. D. Blough, Fairfield, Iowa; Dr. C. B. Eddy, Finchville, Ky.; Henry G. Alvord, Mountainville, N. Y.; Mr. Caffee, Marion, Ohio.

The Illinois Shorthorn Breeders' Association.

By A. Hostetter, Mt. Carroll, *Secretary*.

In pursuance of a plan suggested by certain Shorthorn breeders of Illinois, an informal meeting of the Shorthorn breeders then in attendance at the sales being held at Dexter Park, was held in the club rooms of the Grand Pacific Hotel, Chicago, Ill., on June 7, 1882. A preliminary organization was effected by electing J. H. Pickrell, Harristown, President, and Alvin H. Sanders, Chicago, Secretary *pro tem.* It was the unanimous opinion of those present that a live, active, practical association would greatly promote the Shorthorn interests of Illinois. The following articles of association were adopted:

Article I. The name of this Association shall be the Illinois Shorthorn Breeders Association.

Art. II. The object of this Association shall be the promotion of the general welfare of the Shorthorn breeders of Illinois.

Art. III. The officers of this Association shall consist of a President, Vice-President, Secretary and Treasurer, to be elected annually by ballot; and four Directors, who, together with President, Vice-President and Secretary, shall constitute an executive committee. The said directors to be elected at the first regular meeting of the Association, two for two years and two for four years, two being elected annually thereafter for a term of two years.

Art. IV. All persons engaged in the business of breeding Shornborns within the State of Illinois may become members of this Association by signing the articles of association and paying a membership fee of one dollar.

Art. V. The Association shall meet during the Fat Stock Show in Chicago, in November, 1882, and at such time and place annually thereafter as the Association may determine.

Art. VI. These articles of association may be amended at any regular meeting by a majority of two-thirds of the members present.

The following call was issued for a meeting in November:

Chicago, Ill., October 30, 1882.

To the Shorthorn Breeders of Illinois:

Without entering upon an argument as to the benefits to be derived from united action, it is desired to call your attention to the fact that for several years past the breeders of Shorthorns in various sister States have maintained State organizations, which have been productive of good results. The recent agitation of various questions of great general interest to all breeders of Shorthorns has more than ever before pointed out the necessity of some method whereby concerted action upon any subject may be taken as occasion seems to require. The past winter witnessed the formation of vigorous State Shorthorn Breeders' Associations in the neighboring States of Kentucky, Missouri, Kansas, Iowa and Michigan.

In the spring of the present year, certain public spirited breeders of our State endeavored to ascertain the general sentiment, with regard to the organization of a Shorthorn Breeders' Association for the State of Illinois. The responses in almost every case were of the most favorable character, and in pursuance of the plan, an informal meeting was held at the Grand Pacific Hotel, in Chicago, on the evening of June 7th, during the Shorthorn sale series then in progress at Dexter Park. A fairly representative attendance was secured, and a temporary organization effected by the adoption of brief articles of association and the election of J. H. Pickrell, of Harristown, as President, and Alvin H. Sanders, of *The Breeders' Gazette*, Chicago, as Secretary; both officers *pro tem*. The undersigned were likewise appointed a committee to call the attention of breeders to the Society and extend a cordial invitation to all to meet Tuesday evening, Nov. 21st, 1882, at the Grand Pacific Hotel, Chicago (during the week of the Fat Stock Show), become members of the Society, and assist in effecting a permanent organization.

In accordance with the above, we hereby issue this circular, trusting that we need only call attention to the place and date of meeting to insure a large attendance.

We urge upon all breeders the advisability of organizing a strong State Association in order that, through it, Illinois may exert her proper influence in shaping the various questions constantly coming up for action.

Let us come together annually, listen to papers and discussions on topics of interest to all, exchange views, relate experience, and verify the old adage that "In Union is Strength."

Respectfully,

J. H. PICKRELL,
SAMUEL DYSART,
A. B. HOSTETTER,
WM. BROWN,
ALVIN H. SANDERS.

The result of this call was a good attendance of Shorthorn breeders from all parts of the State, at the meeting at the Grand Pacific Hotel, Chicago, November 21, 1882. A permanent organization was effected by the election of officers, as follows:

J. A. Pickrell, Harristown, President; J. W. Judy, Tallula, Vice President; J. H. Potts, Jacksonville, Treasurer; A. B. Hostetter, Mt. Carroll, Secretary. J. L. Latimer, Abingdon, and S. E. Prather, Springfield, directors for two years; Peleg Winslow, Kankakee, and P. A. Coen, Washburn, directors for one year.

No prepared papers were read at this meeting, but there was much interesting discussion upon the herd book question; the propriety of castrating some of the best Shorthorn bulls for exhibition at future fat stock shows; a State representation in the association that controls the American Shorthorn Herd Book, and other topics of interest to Shorthorn breeders. For the initial meeting, it was certainly a decided success, and showed conclusively that much good could be accomplished by concert of action, and that no breeder of shorthorns could afford to miss such meetings, or fail to become a member of the Illinois Shorthorn Breeders' Association.

A special meeting was held during the series of Central Illinois Shorthorn sales, at Springfield, June 5, 1883. The association decided to raise by subscription a fund sufficient to duplicate all premiums won by Illinois exhibitors on thoroughbred shorthorns, at the Chicago and Kansas City Fat Stock Shows for 1883. Enough subscribers were found immediately to guarantee the fund, and the list afterwards was enlarged, and an opportunity given to nearly all the breeders in the State, through a circular sent out by the Secretary, to help the good work along.

The suppression of contagious diseases among cattle, and the plan of calling a national congress of cattle men, were discussed. Col. J. W. Judy, Tallula; S. E. Prather, Springfield, and D. W. Smith, Bates, were appointed a committee to confer with the U. S. Commissioner of Agriculture, and various State associations, as to the advisability of calling such congress.

The publication of an Illinois Shorthorn Breeders' history or directory, and other questions, were discussed, but without action.

The second annual meeting will be held in Chicago, during the Fat Stock Show of 1883.

The following is a list of members of the Illinois Shorthorn Breeders' Association:

J. H. Pickrell, Harristown,
J. W. Judy, Tallula,
W. C. Vandercook, Cherry Valley,
S. E. Prather, Springfield,
P. A. Coen, Washburn,
R. Bullock, Tonica,
T. W. Harvey, Chicago,
Peleg Winslow, Kankakee,
W. A. Colton, Cambria,
B. Z. & T. M. Taylor, Decatur,
W. M. Miller, Mattoon,
W. H. Fulkerson, Jerseyville,
C. C. Blish, Kewanee,
T. H. Crowder, Bethany,
J. L. Latimer, Abingdon,
D. G. Ryburn, Randolph,
C. W. Down, Cambria,
Herbert Blakeway, Ridott,
Charles Blakeway, Ridott,
Henry M. Winslow, Kankakee,
Nelson Jones, Towanda,
J. C. Rumsey, Onarga,
J. S. Whitbeck, Belvidere,
J. H. Crandall, Milton,
J. F. Prather, Williamsville,
J. N. Dunnaway, Ottawa,
A. B. Hostetter, Mt. Carroll,
J. H. Potts & Son, Jacksonville,
E. W. Perry, Chicago,
A. H. Sanders, Chicago,
Samuel Dysart, Franklin Grove,
C. C. Judy, Tallula,
Jacob Weaver, Biggsville,
Adam Miller, Paw Paw,
C. H. Thorne, Marengo,
H. H. Baer, Polo,
John Sherring, Florid,
A. H. Wise, Freeport,
P. R. Parish, Kirkwood,
J. D. Porter, Alexis,
J. G. Clark, Champaign,
J. A. Turbett, Smithville,
C. W. Bridgeford, Jay,
S. W. Hutchins, Kenny,
S. T. Napper, Scales Mound,
Wm. A. VanOsdol, Sterling,
James B. Turner, Ewing,
D. W. Smith, Bates,
J. B. Cottingham & Son, Smithville
Lewis Stokey, Warrensburg,
A. J. Graves, Belvidere,
M. A. Green, Fulton,
J. M. Hamilton, Pecatonica,
W. P. Hiddleson, Morrison,
J. R. Sterns, Capron,
T. J. Lease, Ridott,
I. H. Jewell, Sublette,
H. Green, Elizabeth,
A. P. Petrie, New Windsor,
J. S. Highmore, Rochester,
C. C. Case, Cherry Valley,
Rigdon, Huston & Son, Blandinsville,
John Turner, Todd's Point,
H. S. Cleveland, Pecatonica,
R. D. McNabb, Mt. Palatine,
John Swanzey, Ridott,
J. H. Paddleford, Cleveland,
J. H. Lafferty, Alexis,
W. R. Wills, Pittsfield,
Lafayette Funk, Shirley,
A. DeLany, Lacon,
B. B. Funk, Shirley,
Mr. Hoyt, Harristown,
F. J. Mulberry, Girard,
J. H. Croft, Varna,
Jas. N. Brown's Sons, Berlin,
J. W. Moore, Mound Station,
E. M. Reese & Son, Franklin,
R. F. Burke, Golden.
Wm. Sandusky & Son, Indianola.
Julius Bicknell, Lovington,
J. R. Peak & Son, Winchester,
Wm. Stephenson & Son, Little Indian,
D. H. Jepp, Nokomis,
J. A. Finley, Oneida,
John Lewis, Camp Point,
J. A. Amrine, Mounds,
Dunlap Bros., Abingdon,
A. A. Francis, New Lenox,
S. W. Daten, Mt. Pulaski,
Strawther Givens, Abingdon,
M. Crum, Farmer City,
J. B. Pocock, Nokomis,
S. W. Sinclair, Ashland,
Wm. Cummings, Buda,
T. T. Shoemaker, Charleston,
Geo. E. Morrow, Champaign,
C. C. Saville, Kankakee,
Geo. C. Wilkinson, Edinburg,
Wm. A. Conant, Paw Paw Grove,
E. S. Clark, Ancond,
Geo. W. Betz, Mendota,
J. G. Garner, Lanark,
M. W. Grinnell, Kankakee,
C. L. Fahs, Peotone,
Robert Gilkerson, Manteno.

The American Hereford Cattle Breeders' Association.

By J. E. Miller, Beecher, *Secretary*.

The very general and extended interest in Hereford cattle, in 1880, seemed to call for an association of those interested in this beef breed. With this object in view a convention of Hereford men was called to be held at the Grand Pacific Hotel, June 22, 1881. Gentlemen were present from many different States, and represented those who owned great herds on the Western plains, as well as capitalists and breeders of cattle in both Eastern and Western States. The entire assembly were of the opinion that the merits of the Hereford cattle needed only to be made known to give them a position in the front rank as the best beef breed of cattle in the world.

The meeting was called to order by T. L. Miller, of Beecher, Illinois, and proceeded to organize themselves into a society under the name of the "American Hereford Cattle Breeders' Association," to which any breeder of Hereford cattle, in good standing, can join himself by handing his name to the Secretary and paying the initiation fee of $10.00. The officers elected were: C. M. Culbertson, Chicago, Illinois, President; T. E. Miller, Beecher, Illinois, Secretary; Adams Earl, Lafayette, Indiana, Treasurer; Vice-Presidents: A. H. Sway, Cheyenne, Wyoming; W. H. Todd, Vermilion, Ohio; Wm. Hamilton, Flint, Michigan; R. W. Sample, Lafayette, Indiana; G. S. Burleigh, Mechanicsville, Iowa; S. Hershey, Muscatine, Iowa; J. M. Studebaker, South Bend, Indiana; A. H. Seabury, New Bedford, Massachusetts; A. D. Raub, Earl Park, Indiana; N. Abbe, Elyria, Ohio; W. M. D. Lee, Camp Supply, Indian Territory. Auditing Committee: Wm. Powell, Beecher, Illinois; T. L. Miller, Beecher, Illinois; Thos. Clark, Beecher, Illinois. Directors: H. Norris, Aurora, Illinois; E. R. Price, Chicago, Illinois; D. Gudgell, Pleasant Hill, Missouri; Jos. Frank, Chicago, Illinois; Geo. F. Morgan, Camargo, Illinois; W. S. Vannatta, Fowler, Indiana; Thos. Clark, Beecher, Illinois; W. E. Campbell, Caldwell, Kansas.

The object of the Association was stated to be to disseminate information as to the Hereford breed of cattle, and also to protect the purity of the breed. There was already published a herd book of Hereford cattle, under the title of "The American Hereford Record," by T. L. Miller, of Beecher, Illinois. This herd book was adopted by the organization as their official record, as one gotten up in good style and shape, and giving correct pedigrees of the Hereford cattle.

Owing to the great demand for grade Hereford cattle to go onto the Western plains, for use in the herds there, the Hereford breeders found it almost impossible to obtain grade Hereford steers for show purposes, to compete with other beef breeds. This Association, with a view to having these animals for future shows, has, at its annual meetings, pledged through its different members a sufficient number of steers for this purpose.

A meeting of the Hereford Cattle Breeders' Association is held annually, in the month of November, at the time of the Chicago Fat Stock Show.

A special meeting of the society was held February 28, 1883, at the Sherman House, Chicago, when they were to act upon the following:

First—"To consider and act upon rules to govern future entries in the American Hereford Record."

Second—"To consider propositions looking towards the society's owning the American Hereford Record."

Third.—"The organization of life membership society of American Hereford Breeders."

The society, during the meeting, purchased of T. L. Miller the American Hereford Record for $5,000.

They also adopted the following rules governing the entry of animals to the herd book:

First.—All animals whose sire and dam are now recorded in volumes one and two of the American Hereford Record shall be entitled to registry in future volumes of the American Hereford Record, *unless* they come within the exceptions to Rule Sixth hereafter set out.

Second.—All animals now imported, and recorded in the first thirteen (13) volumes of the English Herd Book, and all animals now imported whose sire and dam are of record in said volumes, shall be entitled to entry in future volumes of the American Hereford Record, *unless* rejected by the Executive Committee on account of fraud or error.

Third.—The pedigrees of all animals not entitled to record in either of the two volumes of the American Hereford Record, or in the first thirteen volumes of the English Herd Book, under the above rule, shall, before entry in future volumes of the American Hereford Record, show *sire* of recorded pedigree in either the English Herd Book or American Hereford Record; and the pedigree of the dam must include *name*, *breeder*, *date of birth*, *owner*, *sire* and *dam*, through four crosses, and shall end in the herd of a reputable breeder in England, whose herd is of undoubted purity.

Fourth.—When the produce of any cow has been recorded in the first thirteen volumes of the English Herd Book, or in the first and second volumes of the American Hereford Record, all other produce of that cow, by recorded sires, shall be eligible to entry, subject to Rule Sixth.

Fifth.—The pedigree of any animal now imported and not entitled to entry under these rules, shall be examined by the Executive Committee, and after examination the Executive Committee may record said animals if they see fit, with such comments and explanations as they shall deem proper; or they may reject said pedigree, and the owner or breeder, upon reasonable notice to the Executive Committee, may appeal to the Association. Nothing in this rule shall effect Rule Eighth.

Sixth.—If the pedigree of any animal now recorded, or which may hereafter be recorded, in the American Hereford Record, shall be claimed to be erroneous, the said Executive Committee shall examine said pedigrees, collect all the facts connected therewith, and report the same in writing at the regular meeting of this Association, together with their conclusions and recommendations thereon, and this Association shall then act upon said report and upon said erroneous pedigrees; *provided*, that said Executive Committee shall have given the owner and breeder of the animal in question at least six weeks' notice, and a general statement of the alleged defect in the pedigree, and file copies of said notice with their report.

Seventh.—The Executive Committee shall prepare two forms of blanks to be used by all parties in presenting pedigrees for record, as follows: *A.* When both sire and dam are of record in the American Hereford Record. *B.* When sire or dam or both are not of record in American Hereford Record. And the Secretary shall furnish these blanks at nominal cost, to all persons desiring to present their animals for record.

Eighth.—After March 1, 1883, all animals imported into the United States or Canada must conform to the requirements of Rule Three, or they shall not be recorded in the American Hereford Record.

Ninth.—All matters relating to the entry fees, price of American Hereford Record per volume, and the rules which shall govern the entries to the American Hereford Record, as well as the changing or amending of the same, shall be in the hands of this Association.

Tenth.—The above rules can only be amended or repealed by this Association at their annual meeting, and in the manner following, to-wit. Written copies of the proposed amendment or repeal shall be filed with the Executive Committee before the 15th day of September of each year, and said Executive Committee shall cause the same to be published, over their own signatures, in the BREEDERS' JOURNAL during the month of October of each year, or shall send copies of each proposed amendment or repeal to every member of this Association; and such proposed amendment or repeal shall be made only in the event that two-thirds (⅔) of the members present at the time the vote is cast shall vote in favor of the same.

The society has a membership of about seventy-five, and these gentlemen represent about 2,000 head of pedigreed cattle. The society, at its last meeting, among its members pledged $2,000 to be paid for premiums to fat Hereford cattle, at the Chicago Fat Stock Show of 1883.

ILLINOIS SWINE BREEDERS' ASSOCIATION.

PROCEEDINGS

OF

THE FOURTEENTH ANNUAL MEETING.

STATE FAIR GROUNDS,
PEORIA, September 26, 1882—Tuesday, 7:30 P. M.

The Illinois Swine Breeders' Association met in regular annual session, in Secretary's office, on the Fair Grounds.

Called to order by the President, Charles F. Mills.

On motion,

O. S. Cooke, of Wilmington, was made Secretary *pro tem.*

Minutes of the previous meeting read and adopted.

The President addressed the meeting as follows:

PRESIDENT'S ADDRESS.

GENTLEMEN—It is a pleasure to meet such a large and respectable gathering of prominent breeders of swine. There are men in this room who have done much to bring the various breeds of swine to a high standard of perfection, and need no commendation or particular attention called to the very gratifying success that has attended their efforts as skillful and honorable breeders or generous competitors.

The exhibit of swine at the Illinois State Fair for over a quarter of a century, has not been surpassed in excellence, and seldom in point of numbers. The high grade of the swine exhibit at the Illinois State Fair is so well known, that western breeders desiring to purchase the best specimens of the several breeds of swine, make it a rule to attend, and good judges are seldom disappointed in finding what they want.

Exhibiters of swine at the Illinois State Fair, from other States, are most cordially welcomed, and in various ways manifest their appreciation of the advantages of meeting the large number of good buyers in attendance. We trust that the hearty reception they receive from the managers and all in attendance, will induce them to return, year after year, with stock, if possible, of better quality.

An examination of the entry books of the present and preceding six Fairs, makes a showing that, without an explanation, might lead to the belief that the interest in the swine exhibit was decreasing.

The custom prevailed quite generally with exhibiters, until late years, of taking a large number of pigs to the Fair to sell, and this course was an expensive necessity until breeders had established reputations for honorable dealing that enabled them to sell on orders and ship direct from their farms. The majority of buyers, when dealing with breeders not well known to the public, always prefer personally to select stock they purchase

The following table gives the number of entries of swine of the several breeds at the State Fair since 1876.

Year.	Poland China.	Berkshires.	Chester White.	Suffolk and Yorkshire.	Essex.
1876	191	195	94	31	83
1877	354	245	82	102	60
1878	289	114	113	110	58
1879	182	158	74	66	32
1880	150	149	52	32	54
1881	117	141	60	52	57
1882	105	83	61	40	67

The breeds, according to number of entries, take precedence as follows: Poland China, Berkshire, Chester White, Suffolk and Yorkshire, and Essex.

The per cent. of the total number of entries of the several breeds for the period named is as follows: Poland China, 37, Berkshire, 28; Chester White, 14; Suffolk and Yorkshire, 11; Essex, 10 per cent.

Your attention is called to the necessity of sustaining the enviable reputations you have made, and the importance of still further improvement in the quality of stock sold for breeding purposes.

The number of first-class breeding establishments in this State for the most popular breeds of swine should be increased, and a large portion of the boars sold for breeding purposes should be placed in the fattening pen as soon as it can be determined that they are not strictly first-class.

There should be ten good breeders of swine in this State where now there is one, and breeders should be so conveniently distributed over the State as to make it possible for farmers to obtain first-class sires without paying half the first cost of the pig for transportation.

Farmers can make money by raising pure bred hogs for the butcher, and the increased profits resulting from the feeding of well bred stock, when compared with the returns from fattening grade and native stock, can be easily demonstrated Hogs that will not give, under favorable conditions, an increase of at least ten pounds of pork for each bushel of corn consumed, should be discarded by the breeder and feeder.

The annual loss in feeding inferior or native hogs on the great majority of farms would cover the cost of a well bred boar, having all the desirable characteristics.

Motion of Mr. Castle carried,

That a vote of thanks be tendered the President for the address, and that the same be published in the proceedings.

The committee appointed at the last meeting to solicit funds for the purchase of a silver cup, to be awarded the exhibiter of the best pen of Berkshire hogs of his own breeding, reported that $50, the desired amount, had been raised.

The committee appointed to solicit funds for a prize cup for Poland Chinas, reported only $18 as subscribed.

Motion of Mr. Castle carried,

That a committee of three be appointed to solicit necessary funds for the prize cup to be awarded exhibiters of Poland China swine.

President appointed as said committee Messrs. O. L. Castlė, H. H. Clark and Tilford Rice.

Motion of Mr. Springer carried,

That the prize cups of the Association be awarded by one expert judge on each class competing, viz: Poland China and Berkshire swine.

Motion of Mr. Norton carried,

That the expert judges be selected by three Berkshire and three Poland China breeders.

Motion of Mr. Stoner carried.

That the Illinois State Board of Agriculture be requested to provide rings for the several breeds of swine, for boar and sow under six months of age.

Motion of Mr. Castle carried.

That the Association proceed to the election of officers for the ensuing two years.

The following officers were elected:

President—Charles F. Mills.......Springfield.
Secretary—John W. Boston.......Jacksonville.
Treasurer—B. F. Dorsey.......Perry.

VICE-PRESIDENTS.

1st district—	John Wentworth	Chicago
2d “	C. M. Emrick	Chicago
3d “	C. M. Culbertson	Chicago
4th “	T. W. Harvey	Chicago
5th “	—— McCormick	Lake Forrest
6th “	A. J. Countryman	Rochelle
7th “	E. W. Bryant	Princeton
8th “	H. C. Castle	Wilmington
9th “	Conrad Secrest	Watseka
10th “	H. M. Session	Galesburg
11th “	Tilford Rice	Larchland
12th “	A. G. Epler	Virginia
13th “	R. J. Stoner	Stonington
14th “	J. H. Pickrell	Harristown
15th “	Thomas Bennett	Rossville
16th “	E. S. Wilson	Olney
17th “	David Gore	Carlinville
18th “	J. M. Scott	Belleville
19th “	S. T. Webber	Eldorado
20th “	J. G. Anderson	Golconda

The following interesting papers were then read, and generally discussed:

"Hog Feeding for Profit and Health," by Prof. Geo. E. Morrow, Illinois Industrial University, Champaign.

"Swine Breeding in Illinois," by John W. Boston, Jacksonville.

"Causes of Mortality in Pigs," by Dr. N. N. Paaren, State Veterinarian, Chicago.

Motion of Mr. Stoner carried,

That a vote of thanks be extended the gentlemen who had favored the Association with these interesting papers.

The following resolution, introduced by Mr. Rice, was adopted:

Resolved, That the Secretary be instructed to present the proceedings of the annual meeting and the papers read at this meeting, to the Secretary of the Illinois State Board of Agriculture and request the publication of the same in the next annual report of the Department of Agriculture.

On motion, adjourned till Tuesday evening of the week of the State Fair of 1883.

H. C. CASTLE,
Secretary *pro tem.*

CHARLES F. MILLS,
President.

PAPERS READ BEFORE THE ILLINOIS SWINE BREEDERS' ASSOCIATION.

CAUSES OF MORTALITY IN PIGS.

BY N. H. PAAREN, M.D., STATE VETERINARIAN

The pig, at a young age, and under the influence of certain morbid causes, is liable to a disease characterized by the effusion of tuberculous matter into different parts of the organism with profound alterations in the bony structures. Often several organic systems are attacked at once. In every case, the seat of the disease appears to be owing to modifications of perverted vitality. The disease affects young pigs only, and it is especially after weaning, and at the time they change their regimen, that it becomes developed in a more appreciable form, and manifests more rapid progress. In every litter the sow has, generally there will be one or more young ones less developed than the others, as though they inherited debility at birth. These, although they may at first thrive and grow like the others, so long as circumstances prove favorable, yet oftener evince signs of delicacy, as though they carried along with them the marks of precocious dissolution. These are commonly the first attacked, though the disease is not confined to them, but sometimes affects pigs having every appearance of vigorous health. Seldom do pigs die from the affection during their sucking season. They may possibly show signs of sickness, or may die of the cold, etc., but tuberculous disease has certain stages to go through, nor can it so early manifest itself in any very active form.

Conformation will indicate predisposition. The most weakly subjects, whose chests are narrow, are the most likely to have it. Symptoms of debility are seen in such,—they carry the head low, have a sorrowful aspect, and a tardy walk; they are inattentive to what is passing around them, run slowly, and seek warm or sheltered places. When lying in the sun, they are not stretched out in the voluptuous manner in which the others are; while their skin, which is full of cracks, sticks close to their attenuated bodies, and is often covered with lice, which seem to have a predisposition for the sick. A feeble cough is heard; the nose is dry and rugose. Soon, the appetite fails, the tongue proves dry, and the excretions become either hard or diarrhœa-like. The sick are often found standing up in the middle of a herd, seldom move out of their place, and daily cough with fuller note. The respiration also becomes disturbed.

The appetite grows worse and worse, and drinking but little, they remain with their lips in the water without swallowing any. The loss of flesh continues, the cough grows more frequent and feeble, and walk unsteady, until at last appetite fails altogether. The sick remain lying down, and while down die under extreme debility. During or before those symptoms take place, we discover morbid swellings in the bones of the limbs, more particularly in the vicinity of the joints. The spongiose tissue becomes lardacious, and the limb assumes an exaggerated and deformed development. Sometimes these are the earliest signs of the disease, and the pig that has them never grows and thrives like the others. This pathological development of the bones is not confined to the limbs; it has been observed in the face; still, it is the same phenomenon. Sometimes the inguinal glands are swollen and painful. Death does not always result from the increase of the disease. Inter-current affections come on, and particularly those accompanied by debility; some assuming the aspect of turn-about in sheep, others of paralysis of the loins (which latter is very generally, by owners and breeders of swine, supposed to be due to the presence of worms in the kidneys, or so-called "kidney-worm"). Sometimes we meet with retroversion of the rectum, of which the reduction is difficult, and the amputation fatal.

Causes and Nature of the Disease.—To produce and maintain parallel effects on a great number of individuals, causes must exist which have no gregarious or limited action. Among the number, one of the most powerful is consanguinity; then come alimentation and the atmospheric influences. It seems that pigs are more subject to the first (consanguinity).

When first we introduce a new breed, the offspring are produced at first under ordinary fecundity, having all the form and vigor of the race; but should we neglect to procure fresh males, either of the same or another breed, the progeny, breeding in-and-in, will soon become examples of the ill-result of consanguinity. First, we remark that the females who used to have ten at a litter, produce now but two or three. These may still be robust enough; but should the warning not be taken by the breeder, and he goes on to practice in this consanguinity, the young will be born, not only in small litters, but be found slight and rickety, and tardy and unhealthy in their growth; and should not great attention and choice feeding have the effect of correcting this, tubercles will soon manifest themselves, and death become premature. After this manner (of consanguinity) with the finest males and the most healthy females produce naught save very scanty litters, and scrofulous young. Introduce, however, a male not near so fine, but of a different strain, the same females who had had no more than three at a litter, and those rickety, will have ten at a time, which afford evident traces of the father in their form and character, and skin, etc: so quickly does consanguinity manifest its effects, so quickly does the introduction of strange blood produce its vivifying influence. And with such males as have become nearly infecund, begetting produce doomed to die early, place only females derived from crosses, and they will get a numerous and vigorous progeny.

It is from observation of these facts that we perceive how necessary it is, before fresh blood is introduced into a locality, to ascertain if the breed can maintain its purity and durability under the influences acting upon it. Breeders are struck with the external characters of the breed, with the beauty of the produce, and they desire to make this their stock. So long as they suck their mother, the produce are fine; but once weaned, unless by feeding and well-looking after, the skin maintains the conditions under which they have been produced, and which preserve the purity of the breed, the offspring rapidly degenerate, and we find nothing but cast-aways without number. Types made up of continued forcing, all directed to one rational end, are all artificial, not excepting even the thoroughbred horse; and when the hand of man can no longer, by this type, fashion the progeny, the product is bastardized, its valuable characters diminish, and external influences once more prevail.

Of whatever kind food may be, unless it contain fibrine, albumen and caseine, it is not alimentary. Milk contains caseine, one of the reparatory principles. Caseine, fibrine, and albumen are, on isomeric principles, transformable one into the other. So great is the power of the organism, that the young subject will transform the caseine he receives, into the albumen and fibrine necessary for the blood, the muscles, etc. During lactation, therefore, nutrition is simple enough, but afterwards it becomes changed; and health which has been flourishing during the time of lactation, may sink under the weaning process, from inherent causes, such as we have described.

Often have we observed that impure, sedentary life, and privation of the sun's rays, give rise to scrofulous disease. This is especially seen in the human subject, and in spite of healthful diet.

The period at which females are put to the male is not without importance. Thus, when the sow is put to the boar about June, parturition takes place in October, and weaning in November and December. The pigs separated from their mother, exposed to humid cold, and badly sheltered, straying away to seek in vain nourishment which they do not find, and so, lacking organic power, sink at this early age. Not able to resist the powerful causes of destruction, they become attacked with bronchitis, rheumatism, etc., all which causes of suffering act as proximate, or remote causes in determining the approach of scrofulous disease, or, should it exist already, in hastening its progress. The neighborhood of marshy puddles, ponds, or low, swampy grounds, has likewise an influence, and especially when pigs are turned out on them in cold weather, fasting, to seek their living.

The adult hog who has acquired strength and vital existence, whose lungs readily burn the carbon of the blood, does not die. What then do we see in the midst of these causes? A sow who has ten pigs at a farrow, connects herself in the course of consanguinity, and her farrow now becomes reduced to three or four; and so in place of being strong and vigorous, we behold them weak and rickety. They remain low in condition, and carry in themselves the seeds of a premature death. When we come to wean them, we find that their organs are not capable of extracting nutritive principles; hence the cold affects them, and they generate phlegmatics. The blood is altered in its course, and the particles which it exhales for the purpose of nutrition, are changed. Instead of nourishing organs, they accumulate, and cause degeneration. This is the phenomenon which gives rise to tubercles and other heterologous tissues, whose presence constitutes scrofulous disease.

Treatment.—We can understand, when animals become attacked in numbers with this disease, that individual treatment becomes impracticable. We must, then, apply to measures which resist and extinguish causes. We must by constant renewal of males prevent the establishment of consanguinity, and by this means preserve to the progeny the primitive vigor of the breed. Experience shows to what extent this renewal is salutary. Again, we must put the sow to the boar at a suitable season of the year, in order that the bringing forth, and the weaning process may fall in good time. Sows, having two farrows annually, ought to be fecundated about the months of April and October; and the young should not be taken from their mothers until two months are completed. Indeed, at a certain period, when they come to have got strength enough, the mother often drives them away from her; but such as are feeble and rickety, may be left still with her; not that they thrive any more for this; for they still remain, in spite of it, small and poor. It is better to put such pigs away by themselves, and bestow upon them special care, particularly in regard to their feeding. In this way, sometimes it happens that they take to thrive.

Any one food, persevered in without change or mixture, is contrary to the maintenance of health. It is a truth too notorious among physiologists to need being insisted on. Linseed may suit pigs at a certain age,—sows who are able to extract the nutritious fluid from it. But, after weaning, in spite of the large proportion of azotic principle in linseed, the stomach of the young pig is unable to extract but very incompletely the assimilant principles which are buried in the midst of abundant mucilage.

Thus, humid cold is a potent cause of disease. In the season of great cold, we should keep the young pigs shut up in some warm and well-ventilated place They ought to have abundance of dry litter But, if we manage to have some pigging at one season rather than at another, the wet and cold will not be so much to be feared; for then the weaning will take place before the bad days of winter set in; and, when such days come, the organism of the young subject will have acquired strength enough inwardly, with sufficient power of resistance.

SWINE BREEDING IN ILLINOIS.

BY JAMES W. BOSTON, JACKSONVILLE.

As a swine-breeding State, Illinois has long held foremost rank with the best on the continent. Within its borders are found the most perfect representations of all the leading breeds, as also good specimens of the less widely known varieties or those of comparatively recent origin. Berkshires, Poland Chinas and Essex abound in profusion. These well known breeds, or their crosses, comprise the great bulk of the hogs grown for market or home use.

The breeding stock in whole counties or districts is known to be almost entirely composed of pure-bred animals—one or another of the breeds above mentioned holding in public favor to such an extent that it is not uncommon for entire trains to arrive at the Stock Yards loaded with hogs showing with remarkable uniformity the characteristics of some leading breed.

It would be interesting to know with some degree of accuracy to what extent the several improved breeds of swine have been used as a means of increasing the amount and value of the pork prospects of the State Assessors returns give no information as to varieties or breeds most in use. It is only since the founding, in the West, of herd books of swine, that we have any data in the matter, and even now we have only the Berkshire and Poland China herd books throwing light on the subject. However, upon examination of these it is found that in the four volumes of Poland China records, published by three different associations, prior to the close of 1880, there were recorded the pedigrees of 361 Poland Chinas bred in Illinois, and 896 owned in Illinois. It is found, also, that in the four volumes of the American Berkshire Record, issued prior to the close of 1880, the pedigrees of 1,418 Berkshires bred in Illinois, and the pedigrees of 1,679 Berkshires owned in Illinois, were recorded.

Taking Berkshires and Poland Chinas together, we find that the whole number of pure-bred recorded hogs owned in Illinois, to the end of 1880, was 2,075. These public records show also that Illinois has nearly 60 per cent. of all the breeders of pure-bred swine in the United States.

Reviewing the history of the live stock interest in the West, we find that a quarter of a century ago Illinois breeders were enterprising enough to import from England Berkshire swine and other pure bred stock. The breeders of this State have, in later years, well sustained their reputation for enterprise, and the determination to have the best in the way of improved stock that the world could furnish. This is shown by the high prices frequently paid for new breeding animals from older States and from beyond the ocean. Some years ago Illinois breeders had to draw more largely upon the Eastern States, and upon Ohio and Kentucky, than at present, for the means of improving their herds. Now our State supplies those to the West and South, and even ships breeding stock to the East.

In point of quality, Illinois pork is not excelled by that produced in any other State in the Union, while, as a rule, it is far superior to much of that grown in regions where swine are, of necessity, confined to small enclosures, and fed on garbage and slops of various kinds Instead of being thus made, the great bulk of Illinois pork is produced from hogs fed chiefly on grass and corn. While young and growing they are allowed free range for exercise and good air—conditions not possible with sty-fed pigs.

For the information of parties desiring to see more pure bred swine for breeding purposes from Illinois herds, the following list of breeders having recorded stock is hereto appended:

OWNERS AND BREEDERS OF RECORDED BERKSHIRES IN ILLINOIS.

Abbott, I. C	Mahomet
Adair & Rea	Mt. Carroll
Adams, Joseph	Moweaqua
Alexander, Wm	Jacksonville
Allen, N. C.	Harristown
Allen, J. B	Delevan
Allen, R. C	Harristown
Anderson, A. W	Jacksonville
Anderson, W. G. & W. H	Lexington
Andrew, Thomas	Elmore
Archer, M	Curran
Bailey, A. H	Champaign
Bailey, Edward	Champaign
Baird, Mrs. W. F	Shirley
Ball, J	Girard
Barber, V	Decatur
Barnard, O	Bloomington
Berry, J. B	Elkhart City
Bateman, C. W	Bloomington
Battise, J. W	Carlinville
Boardsley F. W	Gibson City
Beck, Robert	Springfield

Bedicut, O	Sublette
Begole, Wm. R	O,Fallon
Bell, J. A	Berdan
Benjamin, T	Sugar Grove
Bennett, E. W	Chili
Bennett, J. O. A	Morrison
Bennett, Wm. A	Springfield
Blackburn, Joe	Virden
Blackler Bros	Lake Forest
Black, Thomas, Jr	Auburn
Blakeslee & Smith	Blackstone
Blakeslee, G H	Blackstone
Blough Noah.	Mt Carmel
Bodine, J. W	West Jersey
Boggs, James	Lincoln
Boyle, S. J	Mason City
Bornman, L. C	Belleville
Boston, James W	Jacksonville
Baswell, Wm. A	Orange
Bouton, H C	Anna
Bradley, Daniel	Champaign
Bradohan, John E	Sublette
Briggs, Frank	Virden
Brown, S. S	Galena
Bundy, R. W	Centralia
Burton, Allen A	Forest City
Butler, N W	Springfield
Butler, Speed	Springfield
Butterfield, E F	Libertyville

Caldwell, GeorgeM	Williamsville
Camp, H. N	Bement
Carle, A. G	Urbana
Carpentor, N	Roscoe
Cartmel, J. H	Springfield
Cheney, J. W	Springfield
Chrisman, E. M	Merritt
Clark, H H	Onarga
Clark, James	Virden
Clark, J. G	Champaign
Clark, L F	Onarga
Clark, M. G	Sandwich
Cobb, Emory	Kankakee
Coffin, W. D	Bement
Co'es, E	Grand Ridge
Conant, P. H	Springfield
Connelly, J. L	Harristown
Constant, N. E	Williamsville
Cook, C. E	Union
Cooley, J M	Bates
Corliss, Georgo D	Rantoul
Cortney, C	Carlinville
Coulter, E. D	Lincoln
Cover, Frank H	Williamsville
Craig, J. D	Vienna
Crary, John M	Harristown
Crocker Bros	Rantoul
Crowder, Thomas H	Bethany
Crow, George R	Normal
Cully, J. M. & E. W	Jacksonville
Curry, James C	Beason
Curtis, James	Springfield

Darwin, George, Jr	Joliet
Davenport & Cartney	Carlinville
Davenport, M	Carlinville
Day, H. F	Moweaqua
Day, Wm	Moweaqua
Decker, A. M	Brown's Mill
Dehancey, John	Clintonville
Delashmutt, G. W	Martinsville
Dodds & Black	Auburn
Dodge, Wm. B	Waukegan
Dole, C. S	Crystal Lake
Dole & White	Yates City
Dorey, W. B	O'Fallon
Dorsey, A. J	Perry
Dorsey, B. F. & Sons	Perry
Drury, Wm	Buffalo Prairie
Dugger, W B. & J. M	Carlinville
Duncan, Wm. R	Towanda
Dunlap, Albert	Champaign
Dunlap, Geo. N	Bloomington
Dunlap, M. F	Jacksonville
Dunlap, M. F. & L. W	Jacksonville
Dunlap, Stephen	Jacksonville
Dysart, Samuel	Franklin Grove

Eads, A	Macomb
Eastwood, M	Grayville
Edwards, B. S.	Springfield
Eldred, L. S	Carrollton
Elliott, Geo	Harristown
Elliott, J. H	Princeton
Elliott, J. W.	Harristown
Epler, A. G.	Virginia
Epler, Jacob.	Virginia
Epler, J. M	Little Indian

Famble, Philip	Lamville
Feather, James.	Sunbeam
Fell, Theron A.	Bloomington
Filical, C	Pesotum
Fischer, Christian	Centerville
Flint, M R	Carlinville
Floyd, J. Q. A	Springfield
Foresman, Wm	Harristown
Foster, J & Son	Ile's Junction
Frazier, W. S	Aurora
Fullenwider, J. N	Mechanicsburg
Fuller, Oscar	Blue Mound

Gaston, Frank L	Normal
Gaston, J. R & Son	Normal
George, Milton	Chicago
Goodrich, J M	Waynesville
Goodwin, John	Maysville
Gordon, Wallace.	Atlanta
Gore, D.	Carlinville
Gore, D & Son	Carlinville
Gasling, John	Rockford
Graham, Milo.	Carlinville
Green, Fred	Loami
Greenleaf, L L	Evanston
Greenwood, Jas. W	Loami
Gregory, A	Momence
Griffin, Chas	Belleville
Griffith Thomas	Jacksonville
Gross, Henry	Mackville
Grubb, Amos	Riverton
Grubbs, J. W	Onarga

Hall, Samuel	Mt. Carroll
Hall, W. C	Greenville
Hammers, J. A.	Cazenovia
Hankins, J W	Carlinville
Harlow, R A	Springfield
Hays, W W.	Bunker Hill
Henrie, Jas N.	Paw Paw Grove
Herrington, A	Bonus
Hewer Bros	Belvidere
Highmore J. S.	Rochester
Hilscher, J S	Lincoln
Holder, C. V	Bloomington
Hood, Thos	Upper Alton
Hough, S P	Midland City
Houlton, Jos, Jr	Jackson Corners
Hunter, A W	Coulterville
Hunter, Geo	Carlinville
Hunter, Jas. M	Carlinvill
Hunter, John W	Owaneco
Hunter, Thornton.	Owaneco
Hunter & Bro.	Owaneco

Iles, E F	Springfield

Jacobs, D E	Bishops Hill
Jackson, Nathan D	Garden Prairie
Jackson, Will D	Benton
Johnson, E S	Springfield
Johnston, R. P	Springfield

Kalb, Geo B.	Springfield
Kennedy, Wm. E	Knoxville
Kennedy, James	Price
Kershaw, A	Wayne
Kirkpatrick, Mr	Champaign
Krinklaw, David	Marengo
Kriskie, Joseph	Canton
Kuykendall, J. B	Vienna

Lafe, Swing & Co	Mason City
Landrigan, John	Albion
Lane, Wm. S	Rockford
Langston, Wm. C	Springfield
Latimer, J. F	Abingdon
Latimer, J S	Abingdon
Lawrence, E. L	Champaign
Leslie & McCune	Ipava
Letton, Caleb	Jacksonville
Letton, J. W	Jacksonville
Letton, Mrs. Mary E.	Jacksonville
Lippincott, C E	Chandlerville
Loose, Mrs. J. G	Springfield
Ludlam, A. S	Bradford
Lyman, J. S.	Farmingdale

Major, A. E	Eureka
Major, Horace	El Paso
March, Chas. A	Moweaqua
Matthews, J. P	Carlinville
Maxfield, W. H	Round Grove
Mayham, H. N	Diamond Lake
May, D. C	Rochelle
McCabe, Arad K	Bardolph
McCarte, Thos	Pawnee
McClintock, J. J	Eureka
McCoy, M. D	Rochester
McCune, J. L	Washburn
McGee, A. J	Broadwell
McGee, Hugh	New Grand Chain
McGruder, Chas. V.	Rushville
McMaster, D. R	Sparta
Middlesworth, Wm	Windsor
Millard, E.	Lanark
Miller, August & Bro	Belleville
Miller, T. I	Beecher
Mills, Chas. F	Springfield
Mix James	Kankakee
Moffatt, Mrs. W	Paw Paw Grove
Moffatt & Bretze	Paw Paw Grove
Moffett, W. T.	Decatur
Molohan, Chas	Pawnee
Murphy, T. C	Green Valley
Murray, Jeremiah H	Owaneco

Neal, Wm H.	Rochester
Neil, R W.	Claremont
Nevins, A	Stirrup Grove
Niccolls, C. M	Leroy
Niccolls, John V	Bloomington
Niccolls, Willie.	Bloomington
Norman R. E	Norman
Nybroe, G J	Athens

Ohmart, Jacob M	New Holland

Palmer, M. D	Mendota
Palmer, Philip	Springfield
Park, J. H	Harristown
Parker, Jas.	Wyoming
Parker, Robert	Wyoming
Parks, C. C.	Waukegan
Peffer, J. M	Rochelle
Pickering, H. L	Lamoille
Pickrell, Mrs. A. P	Mechanicsburg
Pickrell, Geo	Wheatfield
Pickrell, Jesse A.	Wheatfield
Pickrell, J. H	Harristown
Pickrell, W. W	Mechanicsburg
Piedrit, Wm	Warsaw
Pieper, John H	Bluffs
Philbrook, B.	Champaign
Poffenbarger, W. C.	Springfield
Pollard, J. H	Springfield
Pope, Jacob	Lamoille
Po[illegible]s, J. H & Son	Jacksonville
Prather, S E.	Springfield
Prime, S. T. K.	Dwight

Radley, Joseph	Earlville
Rankin, N. A	Monmouth
Rankin, N. A. & Son	Monmouth
Reynolds, Isaac M.	Sherman
Reader, J. K.	Auburn
Reddick, Wm.	Ottawa
Reed, Geo	Belvidere
Reed, Geo. & Son	Belvidere
Rice, Henry	Lawndale
Rice, Tilford	Knox Station
Richardson, W. D	Springfield
Richey, N	Tonica
Ringhouse, Henry.	Bloomington
Risk, Wm. D.	Champaign
Roach, J E	Lincoln
Robbins, Chas. H	Springfield
Robertson, Wesley	Jacksonville
Robinson, Glenn	McLeansboro
Robinson, R. C	McLeansboro
Rogers, A. J	Sublette
Rogers, Samuel C	Cowden
Routhe, A. E	Springfield
Rowett, R. and J	Carlinville

Salter, John	O'Fallon
Sanford, H. L	Elkhart City
Sanner, Walter W	Springfield
Saum, Geo. W	Onarga
Scott, E J	Belleville
Scott, F. M	Mechanicsburg
Scott, J. M	Belleville
Scott, J. M. & Son	Belleville
Sears, H	Garden Prairie
Seewald, Wm	Summerfield
Shank, D. H	Paris
Shelly, J. R	Shannon
Short, S A	Mechanicsburg
Shryer, John G	Carlinville
Sibbles, Wm	Lebanon
Sidway, L. B	Chicago
Simpson, J. F	Carrollton
Slater, John	Pleasant Plains
Smith, J	Blackstone
Smith, W. M	Lexington
Smith, Samuel	Rushville
Snavely, D B	Hudson
Snoad, Chas	Joliet
Snyder, Frank M	Urbana
Sodowsky, Harvey	Indianola
Spaulding, J. B	Riverton
Speak, John T	Carlinville
Spears J. H	Tullula
Springer Bros	Springfield
Squier, W. A	Kenney
Stacy, Thos. P	Jacksonville
Stearns, Chas. D	Litchfield
Stephenson, Mrs. Doras	Little Indian
Stephenson, Wm	Little Indian
Sterling, Wm. J	Springfield
Stevenson, Jas W	Bruceville
Stevenson, Wm. & Sons	Little Indian
Stokes, T. H	Lincoln
Stookey, Geo. H.	Freeburg
Stookey, M. T	Belleville
Stratton, Samuel	Litchfield
Strawn, Abner.	Ottawa
Strawn, Joel R.	Chatsworth
Swift, L. C	Plano

Taggart, F	Carlinville
Taylor, N. R	Williamsville
Taylor, T. M	Decatur
Teller, H M	Morrison
Thomas, L. H	Virden
Thompson, John F	Canton
Thompson, S. M. & J. F	Canton
Thompson & Dawson	Rinard
Thorne, C. H	Marengo
Towry, James	Springfield
Tripp, D. H. & S S	Peoria
Tunnison, T. F	Pana
Turner, Thos. J	Virden

Vance, I. W.	Cantrall
Vandercook, W. C	Cherry Valley

Wait, Henry N	Greenville
Ward, A	Waukegan
Warren, George	Middletown
Watts, A. B	Farmingdale
Webber, S. T	Eldorado

Weber, Geo. P	Pawnee
Weber, John B. & Son	Pawnee
Weer, H. H	Carlinville
Wendell, Geo	New Holland
Wheeler, Henry	Hudson
White, Daniel	Crystal Lake
Weise, Herman	Carlinville
Williams, A	Paw Paw Grove
Wilson, Ed. S	Olney
Wilson, Thomas	Earlville
Wilson, Wm	Earlville
Wise, Alfred H	Freeport
Witbeck, John	Belvidere
Wolfe, —	LaPlace
Wolfe, Jas. M	Nilwood
Woods, J. N	Morris
Woods, J. N. & B. F	Morris
Woods, H. S	Rock Falls

OWNERS AND BREEDERS OF RECORDED POLAND-CHINAS IN ILLINOIS.

Bacon & Son	Rockton
Barr, T. H	Argenta
Bassett, Wever	Ostend
Berkley, W. H	Westfield
Bingham, C. M	Hebron
Booth & Huntley	Gardner
Boyd, J. & J. H	Oneida
Boyd, Otho	Lanark
Brainard, J	Oneida
Browning, C. T	Perry
Browning, C. W	Chambersburg
Bryant, E. W	Princeton
Cary, J. W	Canton
Castle, H. C	Wilmington
Chenowith, D	Perry
Christopher, D. G	Fairview
Coleman, James	West Jersey
Coyner, A. P	Champaign
Cully, J. M. & E. W	Jacksonville
Davis, G. M	Fairfield
Dorsey, A. & J	Perry
Dorsey, B. F. & Sons	Perry
Dugger, W. B. & J. M	Carlinville
Edson, W. A	Jacksonville
Ellwood, T. L	DeKalb Centre
Ellsworth, W. W	Woodstock
Ferris, John	Charleston
Flenner, John	Westfield
Gates, G. S	Oneida
Goff, C. W	Monmouth
Hinkley, Samuel	Canton
Howe, John B	Seneca
Hunt, G. W	Greenwood
Hunter, George	Carlinville
Jennings, L. W	Streator
Jones, Frank	Towanda
Kidder, George	Farmington
Lee, Wm	Westfield
Malbourn, W	Gardner
Mannon, O. P	New Boston
Matthews, B. L	Perry
McCreary, J. S	Canton
Moore, A. C	Canton
Moore, A. C. & Son	Canton
Morris, Geo. W	Paris
Neff, J. J	Grant Park
Nichols, E. H. & S	Millersburg
Nichols, Jas. & Geo	Ursa
Nichols, L. W	Ursa
Orton, B. J	Cambridge
Privo, A. H	Charleston
Shepard & Alexander	Charleston
Sisson, H. M. & W. P	Galesburg
Smith, Marion	Midland City
Stetson, Dr. Ezra	Neponset
Stoll, H C	Frankfort
Stout, John H	White Hall
Street, C. & Son	Hebron
Taliaferro, D. M	Roseville
Taylor Bros	Waynesville
Taylor, W	Argenta
Turner, John	Todd's Point
Wharton Bros	Lake Creek
White, Isaac	Charleston
Wise, Geo. A	Wenona
Wood, Henry	Sycamore
Woods, I. N. & B. F	Morris

HOG FEEDING FOR PROFIT AND HEALTH.

OUTLINE OF ADDRESS BY G. E. MORROW, PROFESSOR OF AGRICULTURE ILLINOIS INDUSTRIAL UNIVERSITY.

The campaign speech of an active politician, in which he points out the imminent peril of the country from the corruption of the party in power, is a very different thing from the Fourth of July oration by the same man, in which he extols the unequalled merits of our Government and predicts its continued growth. Yet there may be much of truth in each address. When this same man calmly discusses, with a few friends, the political outlook, he drops the natural extravagance of both his public efforts. So the agricultural writer who wishes to stimulate careless farmers to better practices, draws an overly dark picture of the carelessness, wastefulness and filthiness of our methods of pig management; very different from his eulogy as he indignantly protests against any reflections on the quality of our pork products by foreign nations.

Let us seek to find the safe "middle ground."

All our domestic animals are kept under conditions widely different from those surrounding their wild ancestors. As we have made these animals more useful to us, we have caused them to lose something of their vigor and power of endurance or hardiness.

The hog is kept for one purpose, and to best attain this he has been so bred and so kept that he is unquestionably less active, less pugnacious, less able to endure hardship, and more subject to disease than was, and is, the wild hog.

The various improved breeds of hogs do not differ greatly in essential characteristics. There is more or less size; variation in color; in shape of face, carriage of ear, etc, but all are designed to, as rapidly as may be, convert certain vegetable products into meat and lard. All of them reach maturity earlier; lay on flesh more rapidly; have a larger proportion of fat and less of lean meat or muscle than the wild or the unimproved hog

Again, to secure most rapid growth, it is necessary to limit muscular exertion and encourage eating more than is desirable to secure the best possible degree of health and strength.

Once again, farmers rear hogs to make money from them, and will adopt the methods they believe best for this. In the conditions in which most farmers in Illinois find themselves, comparatively simple methods will be adopted. No plan requiring a maximum of labor or careful attention, nor the use of elaborate rations, will be adopted. The dam's milk will continue to be the chief food of the young pig—and nothing else is so good. Indian corn will continue to be the chief food of the older pig—and it is not the best possible diet for it.

So far, on what we may call the unfavorable side of the case.

There is another side.

The average American pig—and the Illinois pig is a good specimen—gets a good deal of fresh air and exercise It is not the rule that they are reared in close pens or small feed lots. I have ridden some thousands of miles in Great Britain without seeing a pig, old or young, in a farm field. A vast number of American pigs are farrowed in the open fields; and many more spend a good part of their summer lives either in the fields or in large grass lots. Few conditions can be more favorable for healthful growth than a range on good grass or clover.

Many of our hogs are fattened in the fields, eating the partly digested grain found in the droppings of cattle; and although this system may be offensive to a fastidious taste, there is nothing objectionable in it on the score of healthfulness. The pig or hog with a free range in a large pasture, with good water and abundant food, in the shape of softened, partially fermented kernels of corn, is happy and contented, and his owner may be also, as there is no system, in present circumstances of large farming, more generally profitable.

Distinctly admitting that Indian corn is not a perfect food, it is also true that this grain does not deserve the abuse often bestowed on it. When fed in connection with clover, or even with the grasses, it makes a desirable food. For young pigs, the addition of wheat bran, or "middlings," rye, oat or oil meal to the "slops," will be desirable on the score of healthfulness, and often of profit. Something of this can also often be advisably done for the older hogs. Where they can readily be obtained, a little meat scraps will help supply what the corn lacks.

Upon the whole, it is fortunate that the markets are now giving preference to comparatively light hogs. There are objections to ' crowding" hogs, but those are not greater than those which apply to keeping them to twice the age. There is less probability that young stock will be so fattened as to become diseased than that older animals will be injured in this way. The pig of ten or twelve months has spent much of his life in the open air, in most cases, and has not been closely confined, except for a short period.

For most Illinois farmers, I believe the largest net profits from pigs will come from a medium course of feeding; not seeking to get the greatest possible weight—for the last pounds cost much more than those made before; yet entirely abandoning the old method of keeping the hogs 15 or 18 months for growth, then giving three months to fattening. Keeping the pigs in good flesh from birth, giving them food in addition to the dam's milk, keeping them on clover or grass in summer, with some grain in addition, and rarely keeping them beyond ten or twelve months, seems to me the most profitable course. So kept, I do not think any one need be troubled about injury from liberal feeding with corn at the finish.

Our hogs are sometimes subject to the ravages of disease; and so are those of other countries. The pigs of Great Britain and of the continent sometimes have epidemics of "typhoid fever," not so unlike what we call "hog cholera." I have yet to learn of a specific for these diseases. But we are fortunate in having, in carbolic acid, a cheap and invaluable help in preventing many diseases—used in its crude state as a disinfectant for styes, troughs, etc., and pure state, carefully administered, in the drink of the animals.

Much of nonsense has been written about the horribleness of a little muddy water or of a manure pile, as a place "wallowing" or "rooting," but sentimental nonsense on these subjects ought not to make sensible pig breeders and feeders careless and indifferent the importance of reasonable cleanliness.

Reared and fed as he is by intelligent farmers, I believe the hog of Illinois is as healthful as those reared in any other country.

AMERICAN CLYDESDALE ASSOCIATION.

By Charles F. Mills, *Secretary.*

The American Clydesdale Association was organized at Chicago, November 12, 1879, and incorporated under the laws of the State of Illinois, December, 1879.

The following named gentlemen, interested in the publication of a Clydesdale Stud Book, met in Chicago, November 12, 1879, as per announcement published in the stock and agricultural papers, viz: R. Holloway, Alexis, Ill.; W. R. Moffatt, Paw Paw, Ill.; Ezra Stetson, Neponset, Ill.; A. Z. Blodgett, Waukegan, Ill.; W. G. Powell, Springboro, Pa.; J. J. Worden, Swan Creek, Ill.; E. A. Powell, Syracuse, N. Y.; David Grant, Petersburg, Ill.; W. S. Devin, Des Moines, Iowa; S. J. Davis, Davis, Ill.; Richard Rowett, Carlinville, Ill.; Charles F. Mills, Springfield, Ill., and J. H. Saunders, Chicago.

It was decided to form an organization, and the following constitution was subsequently adopted by the Association:

CONSTITUTION OF THE AMERICAN CLYDESDALE ASSOCIATION.

PREAMBLE.

We, the undersigned, breeders of Clydesdale horses, recognizing the importance of a trustworthy record, that shall be accepted as final authority in all questions of pedigree, and desiring to secure the co-operation and assistance of those who feel a genuine interest in guarding the purity of their stock, do hereby unite in forming an Association for the preservation of such records, with a capital stock of one thousand dollars, in one hundred shares of ten dollars each, payable in such amounts, and at such times as the Executive Committee may require, and we adopt for our government the following constitution:

ARTICLE I.—NAME.

This organization shall be known as the American Clydesdale Association.

ARTICLE II.—OBJECT.

The object of this Association shall be the collection, revision, preservation and publication of the history and pedigrees of pure bred Clydesdale stallions and mares, under such regulations as may be prescribed by the Association.

ARTICLE III.—Officers.

I. The officers of this Association shall be a President, Vice-President, Secretary and Treasurer.

II. The President, Vice-President, Secretary and Treasurer, with three additional members to be chosen by ballot, at the meeting for the election of officers, shall constitute an Executive Committee, with power to manage the affairs of the Association, subject to the provisions of this Constitution and the approval of the Association.

III. A Board of Directors, consisting of eleven members, and representing, as far as practicable, the different States and the Provinces of the Canadas, shall be elected with the officers, and continue in office for two years.

IV. All the officers of this Association shall be elected by ballot at the biennial meeting, and shall hold their office for two years, or until their successors are duly elected. Each share of capital stock shall be entitled to one vote, and a majority of all the votes cast shall constitute an election.

At all meetings of the Association members may vote in person or by proxy, or they may send their ballot by mail to the Secretary, whose duty it shall be to vote the same as directed.

Vacancies occurring during the interim may be filled by the Executive Committee.

ARTICLE IV.—Membership.

The members of this Association shall consist of the original subscribers, and of such persons as are approved from time to time by the Executive Committee, and pay for one or more shares of the capital stock of the Association, and subscribe to the Constitution.

No person shall be considered a member of this Association, or entitled to any of the privileges thereof, unless he shall have paid for one share of stock, though he may be a subscriber for more.

Any member neglecting or refusing to pay assessments on unpaid stock within sixty days after notice of such assessment has been mailed to him, shall be deemed to have forfeited his membership and stock.

Certificates of stock may be transferred to such parties not members as the Executive Committee may consider suitable for membership.

Should it occur at any time that any member of the Association shall be charged with willful misrepresentation in regard to any animal owned or bred by him, or with any other act derogatory to the standing of the Association, or with failure to comply with the rules and regulations of the Association, the Executive Committee shall examine into the matter, and, if it shall find that such charge is fully sustained, it shall thereupon suspend such offender, and lay all the facts in its possession before the Association at the first annual meeting thereafter. If, in the opinion of two-thirds of the members present, the facts shall so warrant, the name of the offending member shall be stricken from the rolls of the Association, and all his rights as a member shall thereupon cease.

ARTICLE V.—Meetings.

The annual meeting of the Association shall be held in the month of November each year, at such time and place as may be designated by the Executive Committee—30 days previous notice to be mailed to each member of the Association, giving time and place of the meeting.

The Executive Committee shall hold meetings at the call of two or more members of the committee—four of whom shall make a quorum.

ARTICLE VI.—Secretary and Treasurer.

I. The Secretary shall keep on file all documents constituting authority for pedigrees, and shall hold them subject to the inspection of any member of the Association at all reasonable times.

He shall receive all moneys due the Association, and turn the same over to the Treasurer. He shall edit the "American Clydesdale Stud Book," under the immediate control and supervision of the Executive Board, and shall record the transactions of all meetings of the Association and of the Executive Committee.

II. The Treasurer shall give bond for the faithful custody of the funds of the Association coming into his hands, in such amount and with such conditions as the Executive Committee may require, and make report at each annual meeting (and oftener, if required to do so by the Executive Committee), giving an itemized account of all moneys received and paid out by him up to the time of the annual meeting, and the amount of the balance, if any, remaining in his hands.

III. All bills against the Association shall be presented in detail, and shall be paid only on the order of the Secretary, approved by the President.

ARTICLE VII.—FINANCE AND PEDIGREES.

I. The funds of the Association shall be under the control of the Executive Board, and shall be by such Board appropriated for the verification, preservation and publication of pedigrees and other necessary purposes.

II. The Executive Committee shall exercise a surveillance over all pedigrees presented for registry, and exclude such as are not well authenticated.

ARTICLE VIII.—AMENDMENTS.

This Constitution may be amended or changed, or any other business transacted at any called or annual meeting, with the approval of two-thirds of the members, thirty days notice being given to the members of the Association. Members failing to vote upon amendments to the Constitution, or upon resolutions presented for their consideration, shall be counted as voting in the affirmative The mailing of a copy of any proposed resolution or of any proposed change to this Constitution to the postoffice address of each member, shall be deemed a sufficient compliance with this article.

The following rules governing entries in Volume 1, were adopted:

2. The number of the animal, date of birth, name of breeder, name and number of sire, name and number of dam, name of importer, and name of owner will be printed in the body of the Record. All proper explanatory statements and all necessary extension of pedigrees will be given in the appendix

3. Unsound or unworthy individual animals should not be presented for registry. Such will not be admitted under any circumstances, where facts proving their inferiority are made known to the Executive Committee.

5. The breeder of an animal is the party owning the dam (or her use) at the time of service, and dictating the cross.

7. Only Clydesdales bred in Great Britain are considered imported.

RESOLUTIONS ADOPTED BY THE ASSOCIATION.

Resolved, That Clydesdale Stallions and Mares hitherto imported from Great Britain, or such as have already been purchased for importation and recognized as Clydesdale horses, as well as the decendants of such imported Mares sired by such imported Stallions, shall be admissible to record: *Provided*, that in case of any question being raised as to the eligibility of an animal, the question of admission shall be determined by the Executive Committee; and in case the committee shall decide that such animal, through false representation, has been improperly recognized as a Clydesdale, such animal shall not be eligible to record.

Resolved, That all Clydesdale Stallions and Mares hereafter imported, which are recorded in the Clydesdale Stud Book of Great Britain, or which may be admissible to such record, shall be eligible to the American Clydesdale Stud Book.

Resolved, That all Clydesdale Horses foaled prior to January, 1878, having three top crosses by recorded sires, be admitted; and that all Stallions foaled since January, 1878, having five top crosses by recorded sires, and Mares foaled since January, 1878, having four top crosses by recorded sires, be admitted.

The following report of the Executive Committee of the American Clydesdale Association gives the results of the work of this organization to date, November, 1881:

REPORT OF EXECUTIVE COMMITTEE.

The Executive Committee beg leave to report that the work of the Association has been advanced as rapidly as practicable during the past year. All interested in the publication of an authentic stud book for American breeders of Clydesdale horses, or the general work of the Association, in calling the attention of the public to the superior qualities of the Clydesdale horse, and protecting parties from purchasing alleged Clydesdale horses, have reason for congratulation at the eminent success attained by this organization. The confidence in and appreciation of the work of the Association is attested by the large and increasing correspondence of expectant purchasers, making inquiries as to the eligibility of imported and home-bred Clydesdale horses, and so frequent and numerous are such inquiries that it has been found necessary to answer questions concerning only the breeding of recorded Clydes, or of such horses whose application for registry had been filed.

The Association, during the last two years, has united, with rare exceptions, all the leading and reputable American and Canadian breeders and importers of Clydesdale horses in the work of improving the breed by the publication of a stud book that will enable all interested to intelligently determine the breeding and value of well-bred Clydesdale horses.

That good horses, as a rule, have good pedigrees, is a proposition that no well informed breeder will question, and parties having well-bred Clydesdale horses are not only most thoroughly advertised by having their stock recorded, but the protection against dishonest and unscrupulous speculators thus afforded in making a line of distinction between pure-bred Clydesdale horses and the grade Clydesdale horses that have heretofore been largely purchased under misapprehension as to their purity, and is an advantage that but few that are greatly benefited duly appreciate. The Association has assumed great responsibilities, and the rulings made in reference to the quality and purity in breeding necessary to entitle horses to registry in the future should be adopted only after mature deliberation, as the lowering of the present standard would admit a large number of grade horses of uncertain qualities for breeding purposes, and correspondingly depreciate in value, so far as registry is concerned, the horses of reliable breeders worthy of the highest endorsement.

There has been a strong and persistent effort, on the part of the owners of horses having less than the prescribed number of eligible sires, to lower the present standard. The advocates of such measures will doubtless appeal to the Association at this meeting to take a backward step, if a majority of the members present give any encouragement that such a proposition would receive favorable consideration.

The rejection of upwards of 2,000 pedigrees of stallions heretofore advertised and used in many cases, with the belief that they were well-bred Clydes, has had the effect of creating much feeling and bitter opposition on the part of dishonest dealers in the United States and Canada who have heretofore had no check to the lucrative business of manufacturing pedigrees to order for grade horses, which, owing to the limited number of well-bred Clydes, found a ready market with the inexperienced.

The Association has given the owners of eligible horses all possible assistance in obtaining requisite information concerning the pedigrees, which has necessarily delayed the publication of the stud-book beyond the time contemplated. The earlier publication of the stud-book would have worked great hardship and serious loss to many breeders owning eligible horses who had used due diligence in perfecting their pedigrees. In many instances, after fruitless correspondence, parties have been compelled to travel thousands of miles to localities where the sires of their horses were formerly owned by parties long since deceased, and examine old letters, horse bills and files of newspapers likely to contain the desired information concerning horses imported many years ago.

The first volume is now practically ready for the printer, and contains the pedigrees, with scarcely an exception, of all the early imported Clydesdale stallions of any note. The investigation of pedigrees presented for registry has enabled the Executive Committee to correct many serious blunders in the breeding of a large number of well bred horses. The foundation has been laid broad and deep for Clydesdale horses of good breeding in America, and if the same high standard is applied to imported Clydes, there will, at no distant date, be a marked improvement in the superior quality of horses deemed worthy of a place in the American Clydesdale stud-book.

The following are the officers of the American Clydesdale Association:

PRESIDENT.

ROBERT HOLLOWAY .... Monmouth, Illinois

VICE-PRESIDENT.

WATKIN G. POWELL .... Springboro, Pennsylvania

SECRETARY.

CHARLES F. MILLS .... Springfield, Illinois

TREASURER.

A. Z. BLODGETT .... Waukegan, Illinois

EXECUTIVE COMMITTEE.

Robert Holloway	Monmouth, Illinois
W. G. Powell	Springboro, Pennsylvania
Wm. Moffatt	Paw Paw, Illinois
J. I. Davidson	Balsam, Canada
A. Z. Blodgett	Waukegan, Illinois
C. I Palmater	Ligonier, Indiana
Charles F. Mills	Springfield, Illinois

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James I. Davidson	Balsam, Ontario, Canada
David Grant	Petersburg, Illinois
J. Carrington	Tecumseh, Nebraska

ILLINOIS TILE-MAKERS' ASSOCIATION.

FOURTH ANNUAL MEETING.

Rooms Department of Agriculture,
Springfield, January 13, 1883.

In the absence of the President, R. C. Straight, the meeting was called to order by the Vice President, D. O. Loy, of Monticello.

Vice President Loy congratulated the association on the season of prosperity to tile-makers that had just closed. The demand for tile had largely exceeded the supply, and few tile-manufacturers had any left over for the early spring demand.

The large attendance at the meeting gave assurance that the business had returned a good profit, and that there was no lack of interest in the future of the tile business. The President requested that each member present consider himself responsible for the success of the meeting.

The following gentlemen responded to roll-call, and, having paid their annual dues, were enrolled as

MEMBERS:

Amis, James T.	Danville,	Illinois
Anderson, Olof	Gibson City,	"
Billingsley, J. J. W.	Indianapolis,	Indiana
Bell, James	Minooka,	Illinois
Buck, John	Morris,	"
Bonebreak & Leonard	State Line City,	Indiana
Brinkman, Henry	Mt. Vernon,	"
Boals, M. H. & Co	Alton Junction,	Illinois
Baldwin, H. T.	Peoria,	"
Chandler, Thomas E	Indianapolis,	Indiana
Clark, Geo. M	Low Point,	Illinois
Clayton, Henry	Kankakee,	"
Chapman & Co	Virginia,	"

Collins, Floyd........Thawville, Illinois
Cunningham, J. A........
Campbell, C. C.........Grant Park, Illinois
Cook, J. J.........Columbus Junction, Iowa
Dixon Brick and Tile Co.........Dixon, Illinois
Dawson, Polly & Co.........Auburn, "
Dawson, Walter E.........Colfax, Indiana
Eggleston & Spaulding.........Gibson City, Illinois
Elliott, C. G.........Tonica, "
Franklin, Leonard.........Towanda, "
Fell, Geo.........Peotone, "
French, E. S. & A. L.........Chapin, "
Fenstermaker, B. F.........Ellsworth, "
Farman, L. C. & Co.........Niantic, "
Gregory, J, A.........Lovington, "
Glotfelter, M. A.........Minier, "
Gooding & Stookey.........Belleville, "
Hobart & Franklin.........Delavan, "
Huganbarger, S.........Buffalo, "
Hittle, Isaac.........Galudst, Indiana
Hammond, P. H.........Virginia, Illinois
Hammerchmidt, J. H.........Lombard, "
Hise & Coleman.........Boody, "
Herrington, James.........Geneva, "
Haeger, D. H.........Dundee, "
Irwin, C. M.........Littleton, "
Jordan, Andrew.........Gibson City, "
Ketchum, Benjamin.........Bonaparte, Iowa
Landrum, J. E.........Hebron, Ohio
Lehman, L. L.........Marseilles, Illinois
Loy, D. O.........Monticello, "
Lundy & Wallace.........Kenny, "
Lyon, F. D.........Hamilton, "
Lindley & Vinton.........Indianapolis, Indiana
McCabe, John.........Rushville, Illinois
Morton, J. B.........Rushville, "
McCabe, James.........Rushville, "
Maddock, Samuel.........Salem, "
Middlecoff, J. P.........Paxton, "
McCabe, John.........Fairmount, "
Mills, Charles F.........Springfield, "
McErven, E. S.........Normalville, "
McNeal, Dr. Arch E.........
Miller, G. B.........Mattoon, "
McCullough, J. C.........Washburn, "
McKinzie, J. C.........Adrian, Michigan
Nichols, P. H.........Hinckley, Illinois
Nolen, T. J.........Mt. Sterling, "
Nash, Frank S.........Bowensburg, "
Nebinger & Reeser.........Litchfield, "
Nunes, J. F.........Springfield, "
Pike, E. M.........Chenoa, "
Porter, G. J. M.........Chicago, "

Plumb, F	Streator,	Illinois
Prime, S. T. K	Dwight,	"
Penfield, J. W.	Willoughby,	"
Porter, E. C.	Lewiston,	"
Ridgeway, Robert	Marion,	Indiana
Roach, Cann & Co.	Decatur,	Illinois
Reeser Brothers	Argenta,	"
Snyder, J. F	Cornell,	"
Stookey, D. W.	Buffalo,	"
Sanford, D. B.	Tallula,	"
Snyder, W. C. & Sons	Mt. Pulaski,	"
Steep, E	Morris,	"
Tiffany, Geo. S.	Tecumseh,	Michigan
Tilburry, Oliver	Towanda,	Illinois
Taylor, Wm	Waverly,	"
Tucker, R	Palmyra,	"
VanHise, D	Mt. Pulaski,	"
Washburn, H. A.	Galva,	"
Way, J. B.	Rushville,	"
Williams, Wm. E.	Chestnut,	"
Wilmington Brick and Tile Company	Wilmington,	"

Col. Charles F. Mills, chairman of the committee on programme, presented the following report, which was adopted:

PROGRAMME.

Address of Welcome, by Gov. S. M. Cullom.
Roll-call.
Reading Minutes of last Meeting.
Reports from Members as to the interest in Tile Drainage in their respective localities.

AFTERNOON SESSION.

Receiving Reports of Officers.
Benefits of Farm Drainage, by Prof Geo. E. Morrow, Illinois Industrial University.
Discussion.
Clays and their Management, by G. S. Tiffany, Tecumseh, Michigan.
Discussion.

EVENING SESSION.

Kilns—Construction and their Management, by J. E. Landrum, Hebron, Ohio.
Discussion.
Question Box.

WEDNESDAY MORNING.

Sanitary Influence of Drainage, by John H. Rauch, M. D., Secretary Illinois State Board of Health.
Arrangements for Making Tile in Winter, by A. Horrocks, Bardolph, Illinois.
Roofing Tile—Manufacture of, by J. W. Penfield. Willoughby, Ohio.
Difficulties in Making Large Tile, and How Obviated, by Alex. Huey, Dwight, Illinois
Question Box.

AFTERNOON SESSION.

Road Drainage, by S. T. K. Prime, Dwight, Illinois.
Improvement of Soil by Drainage, by C. G. Elliott, Tonica, Illinois.
Election of Officers.
Adjournment.

REPORTS FROM MEMBERS.

In response to an invitation from the President as to the interest in drainage in various parts of the State, the following verbal reports were made:

John McCabe, Rushville—We cannot supply the demand for the tile. Some farmers in my neighborhood on partially drained land, have raised 70 to 80 bushels of corn per acre the past unfavorable season.

Robert Ridgway, Marion, Ind.—Tile manufacturers have not been able to supply the demand by forty per cent., and several new tile factories have been put in operation in my section.

L. Lehman, Marseilles—I cannot supply the demand for tile in my section.

P. H. Nichols, Hinkley—Last year I advocated advertising. I have changed my opinion now. I cannot supply the demand for tile.

E. M. Pike, Chenoa—I cannot supply the demand, especially for large tile. I believe the price will decrease as the number of tile factories increases.

George S. Tiffany, Tecumseh, Mich.—I am gratified that the tile business is commanding the large investment of capital. The supply is not sufficient for the demand. When I first began manufacturing, farmers asked how water got into the tile. Now almost every farmer is posted as to the benefits derived from tiling.

W. A. Glotfelter, Minier—I am making tile this winter without difficulty. The demand is far ahead of the supply.

T. B. Morton, Rushville—The main question for manufacturers to meet is, how to make more and cheaper tile. Factories are thick, and new ones are being established, and all of them cannot supply the demand.

F. D. Spalding, Gibson—Tile makers now need to devise plans for supplying the large and increasing demand. Farmers who have purchased tile for draining wet land, are now making preparation to tile what they have heretofore considered dry land. Farmers who have experimented, are satisfied that the benefits in dry seasons resulting from drainage, are equal to the good results obtained therefrom in wet seasons. The result, in dry or wet years, is largely in favor of drainage.

S. Hugenburger, Buffalo—There is a large and constantly increasing demand for tile in my neighborhood.

C. G. Elliott, Tonica—Farmers are only beginning to drain their land. No thorough work has been done to my knowledge, but the increasing interest in this subject leaves no doubt that, in the near future, the work will be well done. In laying out drains for farmers, I recommend the use of large tile for mains, so that in the future the work may be thoroughly done.

D. O. Loy, Monticello—I have been making tile during the past five years. At first I had trouble to sell the tile; now I am manufacturing through the entire year, and cannot supply the demand. I have raised the price of tile, and purchasers make no complaint.

G. B. Millar, Mattoon—The demand for tile far exceeds the supply in my county.

J. J. Cook, Columbus Junction, Iowa—I have made, during the past year, about 300,000 tile, and have but few on hand.

G. C. Clark, Low Point—I am largely engaged in draining my farm, and derive great benefit from tiling my land.

Van Oven, —— —I make tile through the year, and cannot supply the demand.

J. A. Cunningham—The demand for large tile indicates that farmers propose to thoroughly drain their farms, and that at no distant date, there will be a great demand for small tile for laterals.

John McCabe, Rushville—Farmers in many localities are laboring under great disadvantages in not being able to get outlets to their tile, and legislation is needed to enable every land owner to obtain an outlet for his tile.

Dixon Tile Co.—This company is just beginning to make tile, and the prospects are encouraging for a large demand.

T. J. Noland—Eight years ago I commenced making tile. The sales for a time were slow, but the demand has increased, and now we cannot supply the demand. Farmers who have experience in tile drainage are enthusiastic over the results, and parties who have expended large sums for tile, are the strongest advocates of thorough tile drainage.

J. T. Ames, Danville.—The demand for tile in my neighborhood is increasing. My factory was the third one put in operation in Vermilion county. At first I could not find customers, but of late have not been able to supply the demand. The large attendance of tile-makers indicates profitable business the past season.

C. C. Campbell, Grant Park.—I have laid ten miles of tile, and expect to put in six or seven miles more of tile this season. I am raising good crops and am well pleased with the results of my investment of money in draining my land.

Gooding and Stookey, Belleville.—Our local demand is not as good as we could wish, but prospects are better. The demand for tile in the southern part of the State is not as good as with manufacturers located farther north.

C. C. Campbell, Grant Park.—In my experience, the benefits resulting from tiling are as good in a dry season as in a wet season.

D. W. Stookey, Buffalo.—I have filled all my orders the past season, but did not supply the demand. It is a bad practice to take more orders than can be filled. Farmers should be encouraged to order from a distance, when local factories cannot supply the demand. The large demand for tile the past wet season, is likely to deceive tile-makers. Yet, the fact is patent to all, that there has been but little thorough drainage.

Mr. — ——. I do not think it true that drainage is very beneficial in a dry season. If a dry season comes, the demand for tile is quite limited.

A. E. McNeal, of Bowensburg.—I do not think I am the biggest fool in the world, yet my experience is that the benefits resulting from drainage, during a dry season, are equal to the advantages derived therefrom in a wet season. I have been tile draining with that understanding, and have seen nothing to change my opinion.

D. Van Hise, Mt. Pulaski.—I have never seen anything like the excitement in my section of the State in reference to drainage. The demand for large tile is increasing. Last year I made 137 kilns.

Mr. Sabin.—Tiling my land pays me well. Have laid fifteen miles of tile on my farm, and shall continue the work of tiling until my land is drained, which will take about five years. It is my purpose to purchase a ditching machine, if a good one can be found.

Mr. ———. I would like to know how many factories have sold tile to road commissioners for use in tiling roads.

Several persons responded by raising their hands.

John McCabe, Rushville.—I sold three-inch tile to road commissioners, and they put them in where they ought to have put in six-inch tile, and the result has been that all interested are continually grumbling.

W. A. Glotfelter, Minier.--I sell one-third of my large tile to road commissioners, and cannot supply the demand for tile for road purposes.

Mr. ———. We sell large tile for culverts. The road commissioners in our section use it almost exclusively for such use.

J. T. Ames, Danville.—Most of the tile purchased for road drainage in my section, has been laid in the centre of the road, which is a great mistake. Tile ought to be laid on the sides of the road, where the dirt is not puddled in wet weather by being tramped by horses. Where tile is laid on both sides of the road, the results are satisfactory.

D. Van Hise, Mt. Pulaski.—The mistake usually made by road commissioners, is in not making good grade. The commissioners lay the tile on both sides of the road, but do not always set grade stakes, and the result is frequently inferior work and unsatisfactory results. The best test of the advantages of tiled road is that those traveling in the darkest nights can tell when the horse comes to the tile drained roads.

Mr. ——. We have been draining roads by putting tile on both sides, and scraping the road, which resulted in making a good road.

D. C. Taylor, Kankakee.—I use a round down draft kiln, and burn 13,000 assorted sizes of tile to the kiln, average value of each kiln $385.00, which cost $46.00 to burn. I find that it takes me longer to burn than other makers,--two days to water-smoke, and three days to burn.

Adjourned to 2 o'clock P. M.

AFTERNOON SESSION.

The Association met pursuant to adjournment.

Prof. George E. Morrow. of the Illinois Industrial University, delivered an address; subject: "Benefits of Farm Drainage." The substance of the speech in brief is as follows:

Mr. Morrow said that six years ago he could have seen the propriety of preparing an address upon this topic, but from the report of the magnitude of the business made to the convention, he failed to see the necessity now. The actively growing demand of the past three or four years has conclusively proved that the farmers are alive to the benefit of underdrainage. Formerly the plow was the symbol of agriculture, but it is now the tile, and this will be the type of the best and highest class of farming. The liberal use of the tile shows that the farmer is intelligent and enterprising. Every plant needs for its growth, soil, heat, light, air and moisture. A supply of water is essential, but an excess is dangerous. A saturated soil is a cold soil. It takes as much heat to evaporate a gallon of water from the soil as to boil away a kettle of water on a kitchen stove. A wet soil is necessarily a cold soil. In a wet soil roots of plants will not penetrate. The surplus water causes the development of acids destructive to the growth of the plants. It also carries away the mineral salts and the nitrogenous matters from the soil and from the air. Dried out soil is left hard, lumpy or baked. Bad drainage curtails the working season of the farmer, shortening it both in spring and fall. Ten years ago there were thousands of acres of rich soil throughout the State covered with ponds, which materially injured the surrounding lands because of the carrying out of the line of saturation. • Moving water in the soil invariably does good. Drainage perfectly systematized will conduct water to the soil after a protracted dry spell, and be of benefit to the growing plant. Soil is not dead matter. It is a living thing. The forces of matter are continually making soil. By the action of water and air, the insoluble matter is made fit for plant food. Drainage is opening the soil to the passage through it of both water and air, working over the hard and harsh soils into food fit for the growing of plants. Good dry earth is one of the best absorbents. It absorbs the gases of decaying substances. The falling rains wash into the drained earth the gases from the air and the manurial matters on the surface. There is, however, a loss or waste in drained soils. The amount is much less, however, than where there is no drainage to secure a minimum. Drains should be laid deep. By a provision of nature, wherever the soil on drained land becomes too dry, water is brought back by the capillary tubes in the earth, bringing with it the nitrates so necessary to the growth of the plant. Tile draining is a saving of the land and improves really good land. Last spring some of the University lands were badly overflowed by the heavy spring rains, and they wished they had expended more money for tiles.

New-drained lands produced better and wholesomer crops, and wherever there is plenty of drainage a marked improvement in the sanitary condition is noticed. It is impossible to give an exact idea of the profits in tile draining. In many cases it has paid very largely. It has reclaimed thousands of acres, and again it has done very little more than pay for itself, where the work has been poorly done. The testimony of all is that, wherever a good system of drainage has been laid, the lands have been improved, and a better crop realized. Few things in a farm practice have succeeded so well. The tile-makers are doing good, and he hoped they were making money. The manufacturer who allows poor tiles to leave his factory does a foolish thing. He disappoints the farmer and hurts the cause. A mistake on the part of the farmer is the use of a small tile. The makers should urge the farmers to lay the largest sizes. In laying tile, a good outlet is essential, and to secure a good open ditch, is necessary. Tiles should be laid with a uniform bottom, at a good depth. The joints should be well connected. Tile drains will not last for an indefinite time. The necessary repairs should be attended to at the earliest date, and this will result in another saving of money. There are two questions of the greatest moment—roads and drainage. The tile-makers are working actively for the benefit of the latter, and it is hoped that the time will soon come when they will aid the former.

In the discussion that followed, G. S. Tiffany, of Tecumseh, Mich., called attention to the circulation of air down through the tile outward during rainfall, and inward from the outlet after rains, giving a circulation of air through the soil.

J. J. W. Billingsley, of Indianapolis, said that some reference had been made to the probability of a decreased demand for tile in the event of dry seasons, and an increase in the number of tile factories. The advance of this important interest is assured. In the publication of the Drainage Journal I am experiencing almost every day an increasing interest in the subject throughout the entire country. Inquiries are coming from Virginia, New Jersey, the Carolinas and the Canadas; in fact, from almost every State in the Union. There is a large prospective demand for tile on the Lower Mississippi. A sugar plantation near New Orleans is now being thoroughly drained as an experiment, the tile having been shipped from Catskill, on the Hudson river, around the coast by water. Illinois may as well get ready to supply this demand.

C. G. Elliott, of Tonica.—It has been claimed, and with some truth, too, that water, in passing to the tile down through the soil, carries with it salts previously deposited near the surface, but these are returned afterwards by the capillary flow, which begins as soon as the surplus water is removed.

Prof. Geo. E. Morrow, Illinois Industrial University.—The loss of salts is much greater upon exposed lands. Large crops are necessary to shade the soil and prevent the loss of salts. And, as has been stated by Mr. Elliott, the capillary attraction will bring the salts back to the surface.

P. Howard, of the Illinois Road Association, requested that a joint effort be made to influence the Legislature to provide for the improvement of the public highways, and asked the appointment of a committee for this purpose.

The Chair appointed the following committee: F. D. Spalding, E. M. Pike, Mr. Van Hise and S. F. Nunes.

CLAYS AND THEIR MANAGEMENT.

G. S. Tiffany, of Tecumseh, Mich., to whom this subject had been assigned, said: The importance of this subject is very apparent. Every kind of clay demands different treatment. There are a great many different kinds of clay. We can not give any rule for working clays. Some are easily worked, others difficult. Machines will work well in pressing a particular clay, and in others not so well. Some will say the machines do not work well, but it is because the peculiarities of the clay are not understood. You all have your difficulties in working clay. You will be profited more by giving your experience to each other, and in this way develop more facts than by anything I might be able to say.

To the casual observer, clay is simply an adhesive, plastic earth. The chemist discovers in its varying proportions of silex, aluminum, iron, etc., and the practical worker finds characteristics in different banks so different and so numerous that he is unable to account for them or predict with certainty, from his own judgment or the analysis of the chemist, what kind of ware a certain clay will produce. You may make a crucible of one kind of clay in which you may melt or burn to a cinder another variety. With one variety are made beautiful forms of terra cotta for architectural ornaments, and even the highest artistic skill first expresses its ideas in forms of clay; from another it seems almost impossible to make common brick profitable. The ease and apparent lack of skill with which bricks are moulded by hand from some kinds of clay, lead men of capital to invest their thousands in expensive, well-made machinery, and attempt to make brick from clay that is lacking in some element, and fail disastrously. I can not recall the many cases of the kind within my own knowledge. So frequent have been these failures, and such has been their effect on public opinion in some localities, that it is believed that brick can not be made there by machinery. Strange! Isn't it? That while machinery can stitch the most delicate fabrics, weave gossamer threads of silk into almost airy garments, or the words of "Home, Sweet Home" as clear as type can print on beautiful badges. Strange! That while machinery can make watches, whose parts are interchangeable, and reduplicates the plates of an elaborate engraving with sufficient skill and judgment to finish suitable material and guide its operatives, that it can not make a brick! It is very common for men who fail in brick-making to charge their want of success to the machine they have used. I am convinced, from an experience of nearly a quarter of a century in a large field of observation, from New Brunswick to Old Virginia, and from the Mississippi to the sea, that the failures in nineteen cases out of twenty are owing either to an unsuitable selection of clay, or its improper management.

The success of Bernard DePalessy, the famous French potter, was delayed for many years by the variable character of the clays he worked. One would melt before the glaze was formed, another would blister, to another the slip would not adhere, some would contract or expand in heating or cooling more than the glaze, destroying its surface. For thirteen years or more he struggled in poverty with these difficulties, was reduced to such leanness of body that his clothes hung loosely upon him, and he verily thought that he should sink into his grave before he should succeed. A skillful manufacturer who has worked in clay for half a century, and has been successful, said to me, "A man may make a fortune on this side of the road and go across the road and lose it." Such, my friends, is the variable character of the material you have to work. The human countenance has certain prominent features, but no two faces among the myriads of men are alike. Do you know of any two clay banks of common clay that are alike? I do not. To those who intend to commence the business, let me say: A fact is worth more than any man's opinion. Ask experts, if you wish, what kind of ware your clay will make, but before you invest your money, try it by fire and know. The colors of our common clays are no evidence of their character. They are owing to vegetable pigments or metalic oxydes, the first will burn out, and the latter will give a prominent coloring to the ware. You may as well judge a horse by his color. The terms "Elm clay," "Black Ash clay," etc., heard quite often in Indiana and Ohio, have only a local meaning. In other States you can find quite different clays under these woods. The character of the tree growth is determined largely by the amount of moisture in the land. Wet lands generally bear soft timber, and dry lands hard timber. A manufacturer should study the clays in his vicinity and test them alone, and with the clays he is using. It is said that in the manufacture of iron two inferior ores mixed will sometimes produce an iron superior to that which either one alone will make. This is true in clay working. As the varieties of clay are undefined I will speak of them under the names of the ware to which they are best adapted. A scouring brick clay has much of the appearance of gray or blue quicksand, and has, when saturated and spotted, a jelly-like movement. The silex is largely in excess, but is impalpably fine. It is found in banks or bluffs of timber land. No doubt many of you have such a clay in your vicinity. The process of making the bricks is simple. If the clay is pure, it is washed and run off into vats, where it is allowed to settle, and the water is drawn off. The remaining slip is mixed with a dryer clay run through an ordinary soft mud brick machine, in a very wet state, and the bricks are allowed to partially dry in the mold. They are too much of the nature of quicksand to bear dumping on the yard. There is no reason why these bricks should be imported from England.

The common brick clay should have enough sand in its composition to prevent its cracking in drying. The effect of sand in clay is to counteract its tendency to shrink, retard the process of drying, and make the bricks so that they may be cut true with the trowel. The effect of an excess of fine sand is to make a brick like a scouring or bath-brick. Such bricks make damp, unwholesome houses. The effect of sharp clean sand with good clay is to make a brick more like stone. The health of a city is affected by the quality of the brick within its walls. Those who buy brick from the lowest bidder, often do themselves and their families great injury. I would think it almost impossible to thoroughly disinfect some brick dwellings, for the walls must be dry in order to absorb the disinfectants. The tendency in manufacturing with soft mud machines or molding by hand, is to use too much sand, and with die-machines too little. Instead of securing the safe drying by an excess of sand, manufacturers should adopt other methods. The digging of the clay in the fall and winter, exposing it to frost and spring rains, has a tendency to prevent its cracking. This is the custom in England and in Philadelphia. Philadelphia brick find a market in nearly every city in the Union. It is not the superiority of their clay that makes them bring a higher price, but the more careful, skillful and pains-taking methods they adopt. The same methods would make as good brick in every State. They have a saying that 'one dollar of extra labor adds five dollars to the price.' The Western manufacturer seems to think that a dollar saved in labor, is a dollar added to the profits of the business.

The standard brick in England is 3x7x10 inches. There is not one manufacturer in ten in this country that can make brick of this size, with his system of making, for they would not dry safely. Every particle of sand in the clay should be coated with clay; or instead of a band, it will be an element of weakness. This cannot be done in a dry state. The mass of clay, when it is moulded, should be uniformly moist and alike in composition throughout, so that the bricks moulded shall be of equal tenacity and strength. This cannot be done by any 'working from the bank process,' except where nature has furnished a bank already prepared for the purpose. How providential it is that there are such banks in the Western country. The dwellings in villages and several districts of Illinois are balloon frames, on posts set in the ground. The lumber comes from Michigan. There is not, I believe, a square mile of tillable land that has not clay suitable for drain-tile and hollow brick, and from which, by the mixture of sand and proper tempering good common brick could be made. But this introduces the next division of my subject.

EARTHENWARE CLAY.

Under this name I class all clays that do not readily take a salt glaze and that may be termed on the whole clays suitable for drain tile, hollow brick, etc. It is a misnomer to call it a potter's clay, although many potters use it, and because it does not take a salt glaze they give it a lead glaze, a deceptive, useless and dangerous glaze. It is not suitable for brick, as you find it; but by a proper system of temperizing and mixing with more sandy clays or clean sand it may be made so. It is much more abundant than brick clay. It underlies the prairies of Illinois and is made into hollow brick and should be the building material of that State. It would thus make a better house than lumber or common brick. Tile makers have the machinery and the clay for hollow brick, and should make them. They will dry safely, and make tile where common brick made from the same clay would crack. The reason why so many tile makers fail to make brick is because they use a tile clay alone without sand, disregarding the well-known usages of brick-makers. And if hand brick-makers and soft mud machines are more uniformly successful, it is because they cannot work a tile clay without adding a large proportion of sand. The fact that die-machines do mould strong, tenacious clays is by unskilled hands made its greatest fault. Another merit of machines, that they will work very stiff clays, is by the same class of workmen made to work to their prejudice. Clay cannot be worked too dry, without forming seams in the ware. After it is burned these seams fill with water, and the action of the frost throws off scales. Sewer pipes are moulded stiffer than tile, but the semi-vitrification of the ware prevents the absorption of water. Sewer pipe clay is found both in a plastic and rocky state. It has oxyde of iron which, under the heat of a brick kiln, would give the ware a light red color, but under the heat required to form a salt glaze the ware would have a dark brown or mahogany color. The blue stoneware is made of clay comparatively free from iron, and fire clay is free from metalic oxydes, and burns to a white cream color. Much of what is called fire clay in the West is not fit to bear the name, for it will not make even second quality of fire brick. Let us, if possible, call things by their right names. Of the management of stoneware clay, and the machinery required to work them, I will not speak, for those of you who work them are as familiar with the subject as myself. Nor will I treat of the tempering of clays. A proper system of weathering and tempering will reduce the most stubborn clays to a plastic state. No treatment by machinery can, in some clays, produce as good results. If you want more machinery as a substitute for pains-taking, care and skill in the preparation of your clays, you are seeking to make a very poor exchange.

SALTING CLAY.

T. D. Spalding, Gibson City, called attention to the benefits of using salt on clay.

Mr. ——— used 50 pounds in 3,000 3-inch tile; lets the wind blow through the tile, as this method makes less shed-room necessary.

G. S. Tiffany, Tecumseh, Mich.—The use of sharp sand will prevent cracking.

Mr. ———. Sand made my tile brittle.

G. S. Tiffany—That would be the result with some clays.

Mr. ———. There is as much difference in the character of clay as there is in men.

John McCabe, Rushville—I have worked in clay all my business life, and have learned that there is a joint clay that will crack. We have some which will stand by drying it very slow. I use a down-draft kiln. We finish the burn, and, twenty minutes after we are done, close up the kiln and get up the heat, then throw in half a shovel of salt; five minues later throw in the same amount of salt, leaving the fires open, and closing on top of crowns.

Question—Will the glazed tile drain as well as unglazed tile?

Mr. McCabe—Yes, sir, the water enters at the joints.

G. S. Tiffany—I must beg leave to differ with my friend Mr. McCabe, as to glazing all kinds of clay. I have tried a thousand specimens and remember well, for I have lost money at it, and hence cannot forget it.

Question--What are the best kinds of shutters?

Mr. ——, Various kinds are in use—one with shutters one foot wide, and hung on a pivot like a window blind, and others like doors open from the bottom.

Mr. Mines—We have some farmers who are thoroughly draining their farms, putting the drains four feet deep, and an average of seventy-five feet apart. Others are trying thorough drainage with good success. Prof Morrow thought prairie soils would show the effects of drainage much quicker than a clay soil. Mr. Funk said he had put down a great deal of tile usually from three to four feet deep, but could not see much difference in the results. Have good success with tile drains, except where too small tile had been used, in which case a second line had to be laid, or small tile taken up. In the tile taken up there was but little sediment, except where the ditch was not properly leveled.

Mr. Funk asked if any one had any trouble in passing under hedge fences.

Several answered yes. It was suggested to put the tile down in cement immediately under hedges.

J. D. Spalding, of Gibson City, said that he had heard that if tile were wrapped in common tarred building paper it would keep the roots out.

Adjourned to meet at 7:30 P. M.

EVENING SESSION.

The Association met as per adjournment.

The following is an extract from a letter to the Secretary of the Association written by Dr. J. M. Gregory, of the State Board of Health:

"I do not feel competent to discuss in its full breadth the subject of the sanitary benefits of farm drainage. But the importance of drainage to health is beyond all question, and far beyond the ordinary belief of our people. It is claimed by high authorities that the deadly fevers which affect the regions of the Campagne around Rome, are due to the choking and destruction of the drains which, in the old Roman days, made it a healthful home of a dense population. It is stated that in recent excavations these large stone drains are found everywhere, but always filled and useless. This region does not differ much in its external features from our prairies of Illinois, and if the stoppage of its drainage has led to effects so frightful, surely the drainage of our prairies would tend to relieve them from the fever-breeding malaria, which too often destroys the the health of the families residing upon them.

"It is a truth well known to physiologists and sanitarians that the presence of much dampness in the soil is not only favorable to the production of malarious diseases, but also to the diffusion of pulmonary consumption and rheumatic disorders. D. H. L. Bowditch, formerly president of the Massachusetts State Board of Health, has conclusively proved damp soils to be the chief producing causes of pulmonary consumption, and the surgeons of the British navy have found that damp ships tend to produce pulmonary difficulties.

"I cannot doubt for one, that our prairie homes are afficted with many diseases which a thorough under drainage of the soil would remove, and if our farmers would count the losses which come from sickness, to say nothing of the pain and misery, and untimely deaths, they would no longer delay to relieve themselves and their families from so threatening a danger. Thorough drainage under and about their houses, yards and fields, would save them from many a visit of the doctor, and a much more costly drainage of their purses by the serious attacks of fevers, pulmonary disorders, and some of the most serious maladies that affect the human race.

"Wishing for your association a pleasant and profitable season and increasing success in its efforts to improve the fruitfulness and healthfulness of our beautiful State, I beg leave to subscribe myself,

"Yours very truly,

JOHN M. GREGORY."

Hon. S. T. K. Prime read letters of inquiry concerning the practical working of the present law.

Senator L. D. Whiting, by request, addressed the Convention upon the effect of the late decision of the courts, and asserted that parties owning lands lower down on the grade have a right to claim damages for an increased flow of water consequent from tile drainage.

Prof. Geo. E. Morrow, recommended that great care should be taken to respect the rights of others. Yet there are important benefits in the general drainage of lands which demand concessions.

Mr. Nichols said drainage does not increase the flow of water where the soil is drained—drained land assumes the nature of a sponge, holding the water until it runs down and out of the tile.

Motion of Mr. Nichols carried,

That a committee of three be appointed to present to the legislature the views of this Convention relating to the needed amendments to existing drainage laws.

Chair appointed as said committee Messrs. P. H. Nichols, C. G. Elliott, F. D. Spalding, E. M. Pike and Charles F. Mills.

KILNS: THEIR CONSTRUCTION AND MANAGEMENT; BY J. E. LANDRUM, OF HEBRON, OHIO.

Mr. Landrum addressed the Convention on this subject at considerable length. He recommended the building of substantial kilns, and that lime mortar should not be used on the inside of the kilns. Wall should be 18 inches thick, and common clay mortar should be used.

In the management of kilns much will depend upon the careful testing of clays, and the adoption of such rules as may give the best results.

The Chair stated that many new members present wished for information concerning the construction and management of kilns, and requested all in attendance to give their experience.

Mr. Stookey—The walls should be built solid.

Mr. Nichols—Don't be penny wise and pound foolish in avoiding the use of many fire brick in building kiln.

John McCabe, Rushville, requested information as to the different kinds of kilns in use.

Twenty-eight responded as follows: Open top, 3; up draft with crown, 5; square down draft, 15; up and down draft, 5.

Mr. Lehman—I use the up and down draft and like it best. I burned in one kiln 6,000 four-inch tile, and had but six cracked tile.

LAYING TILE IN SAND.

Inquiries concerning the methods of laying tile in sand resulted in the recommendation by many that the joints be covered with clay.

BURNING TILE WITH COAL SLACK.

Question—Has any one present had experience.

Mr. Spalding—I use slack and prefer it.

Several other parties present recommended its use.

USE OF GRATES.

Mr. Sheldon—I have a kiln in which I use grates in the fire boxes and in another no grates. The kiln with grates is hardest on the burners. If there is any difference, it is in favor of the kiln without grates, in the economy of fuel.

Mr. VanWinkle—I use both, and like grates best, and I think them more economical. My fire-boxes are set very near in the wall.

Henry Dawson, Auburn, Ill.—I use slack in burning. Put in a cart load of slack in the bottom flues, which takes fire when we get the heat well up, and aids in burning the bottom tile better.

Adjourned to 9 o'clock A. M. to-morrow.

MORNING SESSION.

The Association met as per adjournment.

John H. Rauch, M. D., Secretary of the Illinois State Board of Health, read the following paper on sanitary influence of drainage.

INFLUENCE OF DRAINAGE ON HEALTH

BY JOHN H. RAUCH, M. D., SECRETARY OF THE ILLINOIS STATE BOARD OF HEALTH.

[Dr. Rauch, on being introduced to the Convention, began his remarks by saying that he had been so pressed for time since receiving the invitation to speak to them on the important subject indicated, that he had been unable to do anything toward the preparation of an address on the subject until the previous night. Consequently, what he would have to say would be crude and imperfect, and fall short of doing the matter or his audience proper justice.]

In discussing the sanitary influence of drainage, it is necessary, first, to consider what are the effects of an undrained soil upon health, and in doing this it is important to remember that it is not the palpably wet and marshy grounds which are the only unhealthly localities. This, I know, is the general supposition or belief, and is carried to such an extent as to sometimes produce a false association of cause and effect in the popular mind, so that nothing is commoner than to hear a given locality described as "high and salubrious," and another as "low and unhealthy" But elevated and apparently dry places are not always and necessarily healthy, although low and obviously wet ones usually are. A curious illustration of this association of ideas is furnished by the popular conception of the topography of the Roman Campagna, which is generally believed to be a marshy plain, and to be proverbially unhealthy on that account. As a matter of fact, four-fifths of the Campagna consist of "hills which rise one above the other on the two sides of the valley of the Tiber, up as far as the volcanic mountains of the Sabatine system towards the north, and those of the Latial system towards the south." As I shall have occasion to show further on, these hills, which should be dry and salubrious, are the seats of a most virulent malarial fever. In fact, "it is calculated that two-thirds of the malarial districts of Italy occur upon heights and even upon mountains."

The plateau which fronts eastward on the Hudson river above the Palisades, is 500 feet high, sloping westward to the Hackensack Valley; its altitude and proximity to the sea both tending to temper the summer climates. "All topographical conditions of unusual health seem here present, and yet malarial diseases abound."

In 1849, cholera was epidemic in Chicago, and generally prevailed in low, undrained filthy localities. In one region, however comprising about three blocks near the present water works, and at that time known as "The Sands," the disease was very severe and fatal, notwithstanding that the locality was relatively high, sandy and apparently dry and saluorious. This locality was inhabitated by 32 persons, who were chiefly Norweigians, many of whom had recently arrived Nearly all were attacked, and forty-four fell victims to the malady. At the time, and for many years after, it was queried as to the cause, since the locality was regarded as, comparatively speaking, a healthful one. It was not until 1869 that the chief factor in this high death-rate was discovered in the manner hereafter to be detailed.

Since Dr. Bowditch's researches in this country, and Buchanan's in England, it has become generally accepted that one of the most important causes of consumption is soil-moisture. Where would one more readily look for a moist soil than in a valley? And yet in many instances, as in the town of Saccarappa, in Maine, the deaths from consumption on the hills are double those occurring among the same numbers in the low lands.

The explanation of those apparent contradictions of the proposition that drainage is important to health will be furnished later. Meanwhile, let us consider what are conceded to be the effects of an undrained soil upon health.

All soil is naturally moist—some soils are moister than others. Sands absorb and retain the least of all, but even these, if loose, may hold two gallons of water to the cubic foot. Clays will take ten to twenty per cent. of moisture, and the humus of vegetable decomposition, which covers so large an area of Illinois, will absorb and retain from 40 to 60 per cent. of moisture.

An indispensable agency in the decomposition of organic matter is this moisture. Therefore, given a moist soil with animal or vegetable matter therein, and the evolution of low forms of life, or of chemical agencies, either or both deleterious to health, is assured.

Further, a moist soil reduces the temperature and increases the humidity of the atmosphere, and every one knows the effect upon his sensations, if not directly upon his health, of what is popularly called a 'raw air"—in other words a moist, cold air.

In brief: An undrained soil—meaning an excess of moisture in a soil, whether apparent or not—favors the production and spread, and increases the fatality, of the paroxysmal or malarial fevers; of bilious remittent fever; of typhoid or enteric fever; of consumption, pneumonia and other diseases of the lungs of neuralgia and rheumatism, of cholera, cholera infantum, diarrhea and dysentery—and, possibly, of other diseases.

In discussing this subject, in an address on the Sanitary Problems of Chicago, I offered the following explanation of how drainage had acted beneficially in that city.

"I have found, in judging of the comparative healthfulness of different wards, that the soil affects health by its conformation, elevation and its mechanical structure—conditions which influence absorption and radiation of heat, reflection of light, absorption, retention and movement of water over and through it, in addition to the passage of air through the soil. The soil may also affect health by its chemical character, which acts especially by altering the composition of the air over, or the water running through it. In this way, in addition to its natural character, the decomposition of organic matter affects the atmosphere or the water, and this is particularly the case when houses are located upon the ground, where, owing to the influence of temperature and moisture, septic gases are generated and pent up, and thus exercise an injurious effect upon the occupants of such houses. It is therefore a matter of great importance to keep the ground under buildings as dry as possible, to prevent the formation of noxious gases, particularly where the sun and air have no direct influence.

"In Chicago this can be accomplished only by thorough surface and subsoil drainage.

"The heat of the sun is absorbed in different amounts by different soils equally shielded. Color and aggregation seem chiefly to determine it. Loose and incoherent sands are the hottest, while compact and clayey soils are the coldest. The absorbing and radiating powers of soils are not necessarily equal, though they may be so Generally the radiating power is more rapid than the absorbing,—soils cool more rapidly than they heat. Here the sandy soil is the most healthy, while the clayey soils are damp and moist, and naturally productive of certain classes of disease.

"It has also been observed that some soils absorb and retain moisture more than others. Sand absorbs and retains but little water. clays from ten to twenty times more, and humus, or common surface soil, more than fifty times as much as sand.

"Clays sometimes contain as much as ten per cent. of water by weight, and thus are injurious to health in two ways—by being moist, and, although they contain but little organic matter, the moisture aids in its decomposition, and thus they are malarious.

"In any depression into which there is drainage, no matter what the character of the soil, there is danger to health. Even sandy soil may be damp from this cause, the water rising through the loose particles from the pressure of high levels; or, as is frequently the case in this city, there are pockets of sand into which the drainage of the surrounding soil collects; or an impervious clay is found forming a basin without an outlet, where the water collects and remains until removed by drainage or evaporation."

A recent examination of my data and memoranda shows, on comparison with later published reports, that there has been a reduction of nearly, if not quite, seventy-five per cent. in the mortality from congestive, intermittent and remittent fevers since the lustrum ended in 1855. in the city of Chicago.

The mean annual death rate of the city from all diseases between 1843 and 1856 inclusive was 37.91 per thousand. In 1856 sewer construction was begun, and during the succeeding fifteen years, ended in 1870, the death rate had fallen to 23.97—a reduction of about 37 per cent. From 1871 to 1880 inclusive, it was still further reduced being only 21.15 per thousand—the average for the three closing years being only 17.54 per thousand.

And this reduction kept almost exact pace with the construction of sewers, which are, in effect, one form of subsoil drainage

In one of my reports while Health Superintendent of the city, I made a comparison of some of the wards with respect to sewerage and death rate, in which occurs the following·

"A comparison of the Eighteenth and Fifteenth Wards will demonstrate the truth of the position taken in regard to sewerage. The first mentioned ward has nearly three feet of sewerage to every inhabitant, while the other has but seven-eighths of a foot to each one of the population. What natural advantages there are, such as elevation, etc., are in favor of the Fifteenth Ward.

"The number of deaths for July, August, and September, of 1872, were 1 in 104 in the Eighteenth Ward, and 1 in 65 in the Fifteenth; and for the whole year, 1 in 56 70 in the Eighteenth, and one in 27.02 in the Fifteenth. Of those under 6 years, we find in the Eighteenth Ward 1 in 14.35, while in the Fifteenth there were 1 in 7.81

"In the Eighteenth Ward there are only 89 square yards to each inhabitant, while in the Fifteenth there are 374; but, taking an extent of territory equal to the area of the Eighteenth, from the lower and eastern portion of the Fifteenth, where the greatest mortality occurs, the difference is not so great, while the air space is still greater than in the Eighteenth Ward. The density of the population in the Eighteenth Ward has been increased since the fire, by the building of a number of houses by the Relief and Aid Society, on lots on Hawthorne avenue and Elm Street, two and three deep on the same lot, and in a portion of the ward that is undrained. In addition, almost every portion of this ward was burned over, so that that the privation, added to the depressing effects of the fire, no doubt had some influence in decreasing the death rate.

"The Eighteenth Ward, as a whole, was naturally lower than any other in the city, until sewers were constructed and the streets improved. These wards are selected for the purpose of comparison, because they are more nearly alike than any two in the city, and lie on the North branch, directly opposite each other. Taking all things into consideration, the Eighteenth is the poorest ward in the city. Every portion of the ground is clayey, and was originally low, and its inhabitants are nearly all of the poorer class of our foreign population, of different nationalities, as is also the case in the Fifteenth Ward, with the exception that there are more Irish in the Eighteenth than in the Fifteenth."

The report to the Board had the desired effect, for, from 1873 to 1877 there was a large increase in the construction of sewers. Until this period, the annual increase of sewerage did not keep pace with the annual increase of population, but during this period it really overtook it, and there was a corresponding decrease in the death rate, and although it 1875, 1876 and 1877 there was an epidemic of scarlatina, yet the death rate steadily decreased as is shown by the following table:

Year.	Number of feet of sewer built.	Population.	Deaths.	Death rate per 1,000.
1872	57,342	367,293	10,156	27.60
1873	47,342	385,000	9,557	24.82
1874	146,702	395,409	8,025	20 29
1875	222,322	405,000	7,899	19.50
1876	120,971	415,000	8,573	20 65
1877	64,666	434,000	8,026	18 03
1878	88,031	450,000	7,422	16.49
1879	145,381	475,000	8,614	18.21

In the five years ending 1880 there were only one-fourth the number of deaths, in proportion to the population, from the three typical malarial diseases, that there were in the five years ending 1855. I know of no other factor which had the same influence in causing this reduction as the sewerage of the city and its drainage action.

Similar showings might be made for many places in this State, if we only possessed the data for comparison which would be furnished by a reasonably accurate collection of vital statistics. The collection of those necessary foundation-stones—on which to build any enduring sanitary structure—is lamentably deficient in this State, chiefly for want of adequate appropriations for the necessary clerical labor in the office of the State Board of Health and in the county clerks' offices.

It is quite time, I may remark, in passing, that this subject received some degree of attention from those who control our county expenditures. No investment yields larger returns than that made in the acquisition of knowledge,—and no knowledge is of more vital interest than that concerning the conservation of health and life.

To return now—in the light of what has just been said of the moisture-properties of different soils—to the apparent contradictions first mentioned.

With respect to the Roman Campagna, it is known that it was once thickly settled by a numerous and thrifty population, and that even after the Roman Conquest it was occupied by ornate villas, country houses, and pleasure grounds, which would certainly have found no reason for being there had it been so unhealthy as in modern times. Its unhealthfulness is now known to be due to the gradual abandonment of a system of subsoil drainage, to which modern engineering can offer no parallel, and which relieved the soil of the hills from the subterranean volumes of water poured through them from a number of lakes in the old volcanic craters to the north of them.

The plateau above the Palisades on the Hudson consists of a dense basalt formation, thinly covered with a soil kept moist by the waters collected here and there in depressions of the impermeable rock,—and this accounts for the insalubrity of a region which has all the external characteristics of a healthy locality.

While engaged in examining the borings made in different parts of Chicago, in 1869, I found that there was a depression or basin in the blue clay underlying "The Sands," and as a necessary consequence, the drainage of the neighborhood collected to the depth of two and three feet, while the drainage elsewhere found its way to the lake and the Chicago river. This basin was about seventeen feet from the surface, the overlying strata being composed of loose sand. As the cholera victims used lake water for culinary and domestic purposes, the prevalence of the disease was regarded as the more remarkable. No doubt the privies drained into this basin, and the excreta from the first cases was soon carried into it, with the result mentioned. They were living, as it were, above a hidden cesspool. The locality, since sewers have been built, is one of the healthiest in the city.

In the regions where consumption is found to be more rife on the hills than in the lowlands, the former are found to be covered with a clayey loam, capable of holding from 20 to 30 per cent. of moisture; while the lowlands and valleys are really sandy or gravelly plains.

WHAT IS ARTIFICIAL DRAINAGE?

Drainage is of two kinds—surface drainage, which consists in "opening the outflow," as it is technically called, and deep or subsoil drainage. Of the former, we have numerous examples in canals and ditches, and of the beneficial influence even of these there can be no question. They bear, however, a direct relation to their approximation to deep or subsoil drainage; that is to say, they are more or less efficient in improving the health of a region as they are more or less deep. Until the deepening of the Illinois and Michigan canal was completed in 1871 its effect on health was insignificant; but after that date, and keeping pace with the number of ditches which were cut into it, there was a marked diminution, especially of malarial diseases, in the region so drained. The ditches and other drainage devices of railroads and by the sides of common roads, and those incident to agriculture, have also tended to a general beneficial influence upon health.

Deep, or subsoil drainage, has rarely been attempted on any large scale for purely sanitary objects, except in towns and cities. Here, however, the examples are numerous, and the proof of its beneficial effect is conclusive. In one group of twelve English cities where the annual mortality, in a population of over 300,000, had averaged for many years 26 4 per thousand, before the construction of sewerage and drainage works, it has since been reduced to 23 4. This represents an annual saving of life amounting to more than eleven per cent. The death rate from consumption has been reduced over 28 per cent., and that from typhoid fever over 52 per cent., by these works. In three other English towns, Salisbury, Ely and Rugby, the death-rate from consumption was reduced 49, 47 and 48 per cent., respectively, after the introduction of a thorough system of subsoil drainage. Other towns, equally well sewered but not under-drained, showed no such results.

It is, however, in drainage for economic purposes—as in the reclamation of swamps and marshes, and in agriculture—that the salutary influence is seen on the largest and most striking scale. The practice has prevailed from a very remote period in all parts of the civilized world, and there is nothing of the experimental in its results.

Vast regions, in which malarial diseases scourged the inhabitants, prevented thrift and improvement, and delayed the settling up of the country, have been reclaimed and made salubrious simply by drainage of the soil for agricultural purposes. In modern times these illustrations are found on the largest scale in Europe and England. In this latter country, vast tracts of the low lands of Norfolk, Cambridgeshire and Lincolnshire—in one case, a body of 140,000 acres, known as the "Middle Level,"—have been drained with the most beneficial effects upon health, the prevalence and fatality of the fevers of these regions having been largely reduced; while it is abundantly proven that malarial diseases in England have "steadily decreased, both in frequency and severity, for several years, and this decrease is attributed in nearly every case to one cause—improved land drainage."

But even in our own State, we may find them on every hand. In Bureau county, for example, Dr. Breed reports, concerning the drainage of swamp lands. "The result is that about thirty-six thousand acres of these inundated or swamp-lands have been either greatly improved or quite redeemed. Twenty thousand acres, hitherto of little or no value, have been converted into excellent pasture and meadow lands, while no inconsiderable portion has been rendered good tillage land. Thus, by these means, thousands of acres, once nearly covered with water, swampy, and grown up and covered with reeds, brakes and coarse grass, interspersed with knolls covered with small trees and tangle weed, the favorite haunts of water-fowl, reptiles and muskrats, sending forth over the adjacent country a noisome and pestilential miasm, have become converted into dry land, rich pastures and meadows, where vast herds of cattle may be seen cropping the rich, luxuriant grasses. As a natural sequence, although it does not appear to have had any influence in inducing 'the powers that be' to do the work, the health of the people in these townships has been incidentally improved."

This same observer says that "as the country becomes improved, settled, and generally cultivated, the diseases prevalent have undergone a change, and some of them, that were a terror to the early settlers, are now but seldom heard of or seen."

Similar results are reported from Michigan, New York, and other States. The transactions of the different State medical societies contain much information on this subject, from various parts of the country. The towns of Batavia, in New York, and Shawneetown, in this State, for example, are cited as having been rendered almost uninhabitable from malaria, which was finally remedied by the drainage of swamp lands in their vicinity.

The great corn region of Illinois, with its level or gently undulating surfaces, and deep deposits of humus containing enormous quantities of moisture, would be especially benefited by general deep drainage. A marked diminution of the whole category of diseases unfavorably affected by such conditions might be reasonably expected.

In Southern Illinois the effect would probably be seen most markedly in pneumonia and other acute inflammatory diseases, as well as in the malarial fevers.

By facilitating the prompt removal of surplus moisture the climatic phenomena of temperature, humidity and wind movement may be materially modified; the water supply may be made pure; and the powerful disinfecting properties of a well-drained soil may be increased by its increased aeration. It is literally within the power of man, aided by modern science, to sensibly change his climate, and, in a degree, to control the seasons.

Marsh, in his work on "Man and Nature," says: "The influence of man in changing the climate and physical condition of a country needs no argument to substantiate. I am satisfied that we become the architects of our own abiding places, as it is well known how the mode of our physical, moral and intellectual being is affected by the character of the home Providence has appointed and we have fashioned for our material habitation."

Such is undoubtedly the case, and the question naturally arises, do we intelligently use what knowledge we have? In some respects, no doubt we do; but in others, we depend upon blind chance, not realizing that

Death lives, where power lives unused.

No greater truism can be uttered, with regard to the effect of the systematic drainage of this State upon the health and life of our people.

A topographical survey has been one of my pet projects for improving the sanitary condition of the State, ever since the organization of the State Board of Health, but the multiplicity of other duties, and the limited means at my command, have so far prevented that attention to the subject that its importance demands. A survey of this character is not alone the basis of the proper drainage of this State, but also of a sanitary survey. In no State in the Union can the result of such work be better demonstrated, and with more benefit from an economical and sanitary standpoint than in Illinois. Without the knowledge thus obtained, it is simply impossible to obtain the benefits arising from drainage, and much money will be wasted in futile attempts to secure the desired object, for the want of such knowledge as can only be obtained by a survey of this character. To some extent the importance of this question has been appreciated, but its magnitude and importance have not, as is evinced by the legislation that has been enacted in regard to it. At first laws were passed for the drainage of localities, now they are extended to neighborhoods. This is not enough.

In England the survey of the Royal Topographical Engineers was projected upon a scale of mapping, of one inch to the mile, but the people at last became so much interested in the practical benefits of the maps and charts that the parishes sought for more minute surveys, upon a scale of six inches to a mile, and the parish map has become a sanitary and economic institution. It became not only the source of information needed, but the inspiration of local improvement. This will undoubtedly be the result in this State, whenever such a survey is made.

In his paper on the topographical survey of New York, Prof. Gardner remarks that powerful as are climatic influences in modifying life, science teaches that death dwells not so often in the "viewless winds," which man can neither direct nor restrain, as in the earth beneath his feet, whose form and hygienic characteristics he may mould or change. The sources of many prevailing diseases are to be found in various natural conditions of earth's form and substance, as well as in soils polluted by man. It cannot be too clearly understood by every intelligent householder, that the topography and geology of his immediate neighborhood are exercising a controlling influence on the condition of his family; promoting either health or happiness, or sapping the lives of those he loves.

How important, then, that all should know the earth-features favorable to human development! And yet the physician cannot to-day direct with certainty the anxious inquirer to those localities best suiting physical welfare, nor warn him of unseen dangers surrounding his residence. Laws governing this relation of earth and man are only partially known, or guessed at. The time has come when they ought to be determined, and taught in every public school

Our present knowledge of the subject is too general and undemonstrable to be either convincingly taught or practically efficient. For many years, a connection between certain topographical features and malarial fevers has been noticed. "Some marshes produce miasma," was the sum of past observations. But malaria appeared accompanying such varied topography, that no law of its production was seen until latterly, when character of rock and soil is shown to be as important as conformation of surface in promoting or suppressing malarial fevers, and also, rheumatism, cholera, diphtheria, pneumonia, consumption, and many other of man's worst ills. These diseases appear to be dependent both upon circulation and excess of soil-moisture. The connection of geological and topographical structure with health will then be evident, when it is remembered that natural drainage results from the combined action of configuration, character of soil, constitution of underlying rock and the form of its surface. These four elements regulate natural drainage Each must present favorable conditions, or deadly waters will accumulate on the surface or in hidden strata Remember, too, that no plan for artificial drainage can be completely successful unless based on a thorough comprehension of the natural-drainage system of the area under treatment.

I earnestly hope that this association will use its influence to secure this comprehensive knowledge, by a complete topographical survey of the State.

The speaker closed by stating that it was his intention, as soon as he could command the necessary time, to make a practical application of the principles thus set forth to every portion of the State; convinced, as he was, that no similar amount of effort in any other direction would prove so valuable to the public, either from an economic or sanitary standpoint.

Hon. S. T. K. Prime, of Dwight, read the following paper on

ROAD DRAINAGE

Mr. President, and Gentlemen of the Tile Convention:

Intimately connected with, and, in fact, at the very foundation of all our internal prosperity, lies this question of road drainage. I care not how rich our soil, how large our crops may be, unless we have some means by which we can market them at all seasons of the year, they simply become a burden and a loss to the producer, and eventually a disorganizer of the whole commercial system of our country. It seems to me, at this stage of the question, it is proper and useful that we review very briefly what has already been done towards draining our roads. I consider the experience we have had in that direction for the last four years has conclusively demonstrated the fact that our roads can be drained and put into condition for traffic for all seasons of the year at an expense within the reach of every township in the State. How shall we do it? I answer, first, last, and in every case, use tile drain freely. I can well remember, when the question of farm drainage was first agitated, that those of us who were enthusiastic on the subject were accused of being interested in the sales of tile factories. But now, owing to the truth of what we then stated, the fact is well known that it is an impossibility to overstock the production of tile, owing to the almost universal desire of every progressive and intelligent land owner to thoroughly underdrain his lands. Therefore, when we lay down the fundamental principle that a country road may be underdrained with tile, the accusation cannot now be made that, as individuals or as a corporation of tile-makers, we are directly interested in increasing our sales. When the idea was first suggested that the use of tile was not only a valuable but practical means of road improvement, those who had not investigated the subject, its practical benefits, laughed at the idea, and pronounced it purely theoretical and impracticable. But time has conclusively proven that to-day we have no cheaper and more practical method of road drainage which is adapted to the various conditions of our State than the free use of tile as a means of road improvement. As this question of road making promises this winter to engage the attention of our legislature, and also to be more or less agitated by the "State Road Association," I think it would not be out of place to put upon record, for the benefit of this convention and the public at large, some of the ways and also the results which have already been established by the use of tile for road drainage.

RESULTS ALREADY REACHED.

The first authority which I quote is Mr. C. G. Elliott, of Tonica, Ill., well known to you all as a practical tile engineer. He says: "It is the general opinion of road authorities in this vicinity that whenever water can be removed from roads within a reasonable expense by tile drains, it is better economy to do so than to raise embankments and stagnant water at their bases. The methods of doing this are various, the one most in common use being a line of tile placed at one side of the road or embankment." Mr. Elliott adds that it is a matter of remark that no opinions upon any subject have been more radically changed than those regarding road improvement.

Mr. James White, of Illinois, proposes to underdrain roads as follows: "First place, secure a sub-drain at least four feet from the top of the grade In places I would use two layers of tile along the grade, and leave a free outlet for the water. This being done, would have secured what we now have in dry spots." This, gentlemen, I think, is the whole question in a nutshell. The tile gives us a uniformity of dryness, which is the great aim and object of a road drainage.

A practical man, whose name I cannot recall, says: "If there was tile on each side of the road, it would drain it thoroughly. The water is all the trouble. The least the road-bed is disturbed, the better." The writer adds: "We shall never really have good roads unless there is some person in different districts to work on the roads all the year around."

I quote these extracts for the benefit of those who propose to make laws on road drainage this winter.

Edgar M. Heafer, a man well known in this convention, says: "Many enterprising road commissioners have tried the experiment of disposing of water by the means of tile—some laying a line along one or both sides, others laying them in the axis of the road, all parties using an occasional lateral. The most profitable results have been obtained by either method, but the laying tile on both sides has proven the best." Several roads so drained, Mr. Heafer remarks, are giving good satisfaction, and adds that twenty-four hours of good weather will put such roads in a condition to draw loads of two tons upon them.

My own experience has been somewhat similar Four years ago, to enable me to procure an outlet for a system of tiles, I was obliged to seek the roadside, and for a distance of nearly forty rods put down a six inch tile upon one side of the road. The tile has fully filled the mission. I never hear any one complain of that forty rods being bad. The real work the tile does is this: that while before, for three days or more, this was impassable in bad weather, with the tile it dries out within twenty-four hours, and we have then a good, passable road.

THE PRESENT GREAT NEED.

But, gentlemen, I do not think it necessary to take up your time any further with statements of what has been and can be accomplished by a thorough system of road drainage The State of Illinois to-day furnishes ample proof, in her great prosperity, of what has been done upon our farms with underdrainage, and what can be done to still further develop it, by a broad, comprehensive and well digested plan of road drainage. Our greatest need to-day is some system which will carry into practical effect and upon a larger scale the results of successful experiments which have been tried with road drainage during the last few years. I am very hopeful, if we are able to judge by the tone of public opinion, that we shall soon see great changes in connection with our present system of road drainage. At present, comparatively nothing is being done, from the fact that our machinery with which we are obliged to work, is cumbersome and impracticable. No more important duty, the effect of which will be felt throughout the length and breadth of Illinois, is before this Legislature, than to give us a judicious and comprehensive road law, by which we may be able to avail ourselves of the results of the practical experience of road making and road drainage.

How we are improving and draining our roads at present, in many portions of the West, has been well put as follows: The farmers of the district are notified to appear at a certain date for duty. One or two teams or a dozen men gather to the portion of the road to be repaired. As the road district is a simple meet of democracy, each man is as good as "boss," and is mostly exempt from labor. The boys flourish the spade and hoe, but the horses are the laboring class. As for our "earth works," the deep, narrow side ditches are still cut deeper; the large stones and small boulders along the foot-paths are rolled into the centre of the track, and the finish given with a top dressing of sod. Logs, rails, etc., are then laid on the flanks, to compel travel on the centre. Should the process be interrupted (which often happens), the road is left variegated with piles of dirt, which sometimes lie unspread for the season, reminding the traveler, "rolling through an unfriendly world," that something has been done toward improvement. Probably we can all see that this is a good way not to do it. Is there not a better way?

HOW TO OBTAIN THE DESIRED RESULTS.

Two ideas are growing in the minds of our people, both tending to reform. One is to find the man who has plain engineering wit adequate to road making. In some districts one wants to light a lamp at noon to find him, but, when found, he is a treasure. He is to be put and kept in charge of the roads. The other is to make the tax a cash business. The assessments being payable in cash, the overseer can employ whom he chooses, and if he employs the residents of his district, they work better on a cash basis.

A good road saves wear and tear of wagons, horses and driver; it tells a pleasant tale of the good sense and good faith of the neighborhood; and it adds something material to the value of every farm along its course. I have been informed since I have been here that one-third of the members of this tile convention report unusually large sales of tile to road commissioners for road drainage, and that there is not a single complaint of failure to carry off the water, and leave a good, dry, solid road-bed for all purposes. The only trouble has been, if any has been, that the tile was not large enough, and that proper engineering, with regard to grades, had not been attended to.

I cannot, gentlemen, close these remarks without congratulating you upon the very prosperous condition of the industry which you represent. It is one of the best evidences on record of what can be done by agitation. When this society was first organized, the use of tile was considered a luxury. Now it has become a necessity, and you are not able to keep up with your orders. I trust the day is not far distant when you will be compelled to double your capacity to supply the demands for tile for road purposes. I am free to confess that events are shaping in that direction very fast.

The following resolutions were unanimously adopted:

Resolved, That the thanks of this Association are due and are hereby tendered to Hon. S. T. K. Prime, for his clear, concise and comprehensive paper upon road drainage.

Resolved, That the Association recommend to towns and villages contemplating the permanent improvement of roads, the suggestions contained in the paper.

Resolved, That the success attending the improvement of roads by tile drainage, warrants the recommendation of this plan of making roads.

The following resolutions, introduced by C. C. Sheldon, were unanimously adopted:

Resolved, That it is the sense of this Association that the lien law of this State should be amended so as to give a lien upon land for tile furnished to owners thereof.

Resolved, Further, that we hereby respectfully ask the General Assembly of this State now in session, to pass an act so amending the lien law as to include tile furnished for drainage purposes.

Resolved, Further, that a copy of these resolutions be sent by our Secretary to the presiding officers of the Senate and House of Representatives, with a request that they will lay the same before the Senate and House.

Adjourned to 2 o'clock P. M.

AFTERNOON SESSION.

The Association met as per adjournment.

The following paper was read by C. G. Elliott, of Tonica, Illinois.

IMPROVEMENT OF THE SOIL BY DRAINAGE.

It is the purpose of this paper to consider the way in which underdrainage affects the fertility of the soil as it relates to the production of our agricultural plants. We have many soils which in themselves are fertile, yet it is only under certain favorable conditions that they produce and delight their tiller with an abundant crop. The financial world hangs in suspense during the entire growing season, fearing the worst and hoping the best respecting the future harvest; yet with exception of the ravages of insects and the destruction by storms, both of which are comparatively few, it all depends upon the condition of the soil—the amount and distribution of moisture, and the availability of plant food which may be in the soil and atmosphere.

RELATIONS OF PLANTS TO SOIL AND ATMOSPHERE.

It will be well to notice how plants grow and mature from the soil in which they are placed. The most important facts relating to the growth of plants may be briefly stated as follows: Plants require oxygen, hydrogen, nitrogen, silica, carbon, phosphorus, potash, lime and several other elements which are usually present in all soils in sufficient quantities as to require no special attention in supplying them. The *atmosphere* is composed of about one-fourth oxygen and three-fourths nitrogen and a small amount of ammonia and carbonic acid. These, together with a variable quantity of water vapor, constitute the essential elements of plants.

The soil contains clay, silica and carbon as a basis. These hold by absorption the materials which support plant life and mature its products. The plant draws the most of its sustenance from the soil through the direct effect of the atmosphere, and the light and heat of the sun upon the stalk and leaves is very apparent and important in the process of growth.

It should be remembered that all nutriment from the soil must be taken by the roots in a liquid or gaseous form. No solids can enter the plant as food except in a solution. Roots are very sensitive in this respect and will wander a great distance in a poor soil, searching for food, but are ready enough to remain where sufficient is found.

The whole work of nature in sustaining vegetation consists in preparing proper nutriment for plants. Many elements contained in the soil in small quantities are just as important in this process, but as they are always present we may practically ignore them.

The roots of most agricultural plants are covered with minute hairs, so that the actual root-surface exposed to the soil becomes almost incalculable.

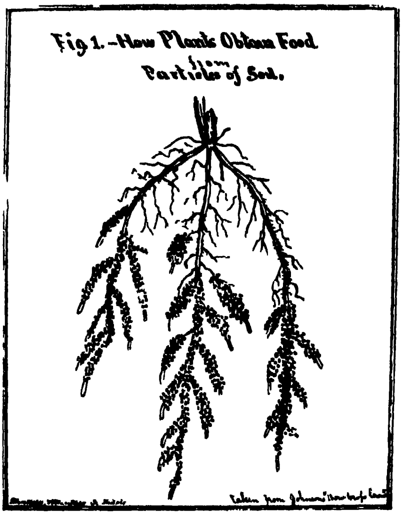


Fig 1.—How Plants Obtain Food from Particles of Soil.

Taken from Johnson's How Crops Feed

Figure 1 represents the roots of a wheat plant lifted from the soil, which are covered with root-hairs. These root-hairs partially envelope the particles of earth, and are brought into the closest contact with the soil. The absorbing surface appears to be confined to those portions of the roots upon which root-hairs are developed, the light, heat and moisture having much to do in influencing the amount of food absorbed by the roots. It is then for us to inquire into the way in which underdrainage contributes to this supply of plant-food,—for it is a fact sustained by common sense and practical agriculture, that a constant removal of plant-food from the soil will result in its impoverishment, unless the loss can be replaced. This loss may be supplied in three ways: First—By the artificial supply of plant materials, in the application of fertilizers suited to the purpose; Second—By the natural collecting and condensing in the soil of gases and vaper evolved by plants in the process of growth and decay; Third—By chemical action, which is continually converting unavailable matter of the soil into that which will support plants.

Since the soil is the medium through which nearly all of the nutriment of our valuable plants passes, we will consider some of the principal properties and forces which act upon it.

POROSITY.

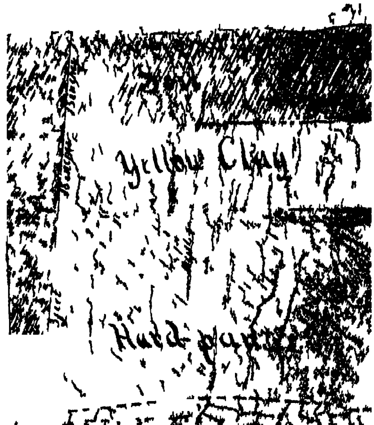
We may regard porosity as the key which unlocks the magazines of fertility contained in the soil. There are two kinds of pores in the soil—those which are sufficiently large to permit water to flow through by force of gravity. These hold what we call surplus, or drainage-water, and when relieved of this water by good drainage, the channels thus left vacant are filled with the atmosphere. There are also more minute pores, which hold moisture and gas against gravity by what is known as capillary attraction. The first are channels through which the elements of fertility come; the second lay hold of plant-food and prevent its waste. The first will hold, of water, about one-fourth of the whole bulk of the soil; the second, one-half, in our loam soils. These pores are illustrated in Figures 4 and 5. When we withdraw by underdrainage the surplus water of a soil, we make it what is termed porous, since the air fills the spaces previously occupied by the water. By this process, soils have a tendency to divide into pieces of various sizes, and then to subdivide, and thus become mechanically finer in texture. Close observation teaches that there is a great difference in the way different soils divide. Soils containing a considerable amount of vegetable matter break up into irregular, many-sided grains. Close, compact clays often break up into cubical forms. When it is a mixture of tenacious clay and sand, the sand separates from the clay particles and leaves them in irregular pieces. A surplus of water in soils makes them an adhesive mass.

EFFECTS OF SURFACE WATER PASSING THROUGH THE SOIL.

The writer had occasion to examine a soil which four years before, had been drained to a depth of six feet The first eighteen inches was black soil, the next eighteen inches was yellow clay, and the remaining distance to the drain was a compact clay of light blue color, called by many a "hard pan Fig 2 shows the cross-section made. The first item of interest noticed in making the cross-section was that there were streaks of black soil extending downward into the clay These were caused by surface water passing down toward the drain carrying with it fine particles of rich soil, which were filtered out by the clay Roots of plants had extended in many directions, as shown in the figure, and decaying had left irregular channels through which the water had passed, and left fertile black soil Had this soil been only surface-drained, these rich particles, to say nothing of other fertilizing materials, would have been carried away from, instead of into the soil (*See Fig* 5)

Rain-water contains a small amount of ammonia and carbonic acid both essential elements of a fertile soil If this water is conducted through the soil into under drains, these gases are taken up by reason of the greater absorptive attraction of clay and carbon, and thus are permitted to perform the important offices in the soil The entrance of air alone, as a consequence of the removal of water reduces the size of the particles, and makes them more suitable for a liquid solution and also facilitates further drainage In the hard-pan subsoil before alluded to, the clay was so hard when the drain was put in that nothing short of pick and mattock would loose the earth When examined four years after the clay near the drain could be removed easily with a common spade This change had been effected by the air which had very gradually entered the soil and was still doing its work of disintegration

Roots in a Drained Soil.



The writer may cite a few observations of practical importance as a result of this examination That in draining very compact clays such as are sometimes called hard-pan tiles put only a few inches into the clay give better results than deeper drains, provided there is at least three feet of more porous clay and soil above Drainage and its consequent aeration are effected very slowly in such clays and though, in time, it will be complete, yet economy would seem to indicate that more drains and less depths are better, if we consider three feet the shallow limit

ABSORBING POWER OF SOIL

We have seen through the agency of porosity induced as a consequence of drainage, elements of fertility are brought into contact with particles of soil and clay, and are absorbed This absorbing power of the soil is of peculiar importance As early as 1836, Pronner published the following experiment Fill a bottle, which has a hole in the bottom with fine river sand or half dry garden earth, pour gradually into the bottle thick and putrified dung liquor until its contents are saturated

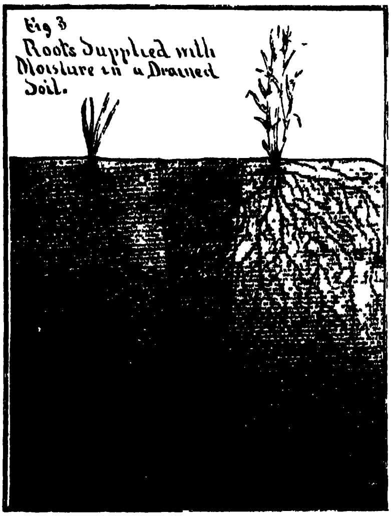


Fig 3 Roots Supplied with Moisture in a Drained Soil.

The liquid that flows out at the lower opening appears almost odorless and colorless, and has entirely lost its original properties. Liebig found that "water, holding ammonia in solution, when poured upon clay, ran through deprived of this substance."

Prof. Way has made elaborate experiments to determine the composition of drain-water from grain fields. He found that in 100,000 parts of drain-water there were from 35 to 60 parts of impurities, consisting of ten mineral substances and a little organic matter. These were pretty satisfactory proven to be dissolved from the soil. What is called ordinary pure water does not differ materially from drain-water as thus determined.

Bronner comes to this conclusion: These examples sufficiently prove that the soil, even sand, possesses the property of attracting and absorbing the attracted matters *so that the water which subsequently passes is not able* to remove them; even the soluble salts are absorbed, and are only washed out to a small extent by new quantities of water. The practical bearing of these facts is apparent The absorption of matter from the water of the surface as it passes through the soil would be made impossible in an undrained or surface drained soil, for the water must flow over the surface to some outlet channel, or be evaporated and leave the surface in the form of volatile gas. (See again Fig. 5)

ABSORPTION OF FERTILIZING GASES FROM THE AIR.

A drained soil acts as a collector and condenser of gases and vapor from the air While it is true that water absorbs and holds within itself large quantities of ammonia and carbonic acid, yet in this condition they are of but little value to plants, since the resulting reduction of temperature and excessive moisture greatly impair the action of plant organs.

Experiments have been made by German chemists, and noted by Prof. Johnson, on the quantity and kind of gases contained in the pores of a drained soil. As might be expected, all the elements of the atmosphere were found, and also additional gases resulting from the decomposition of vegetable matter in the soil. The following three experiments may be selected as illustrating this point·

100 volumes of gas contained—

Kind of soil.	Nitrogen.	Oxygen.	Carbonic acid.
Moist garden soil..	64	3	24
Moist clay	60	6	34
Moist river sand	67	6	31
Composition of air	78	21	04

Ammonia does not appear in the experiments, as the vapor was driven off, and probably the ammonia with it. The experiments show that the soil is a laboratory in which the gases of the atmosphere are separated, and are combined with those evolved by the soil, and thus prepared for plant use. In looking over the experiments in full, an example of which only is here given, we are led to make the following practical deductions:

First a dry soil absorbs more gaseous matter than a moist one except in the case o ammonia and some of its compounds in which the opposite is true Second the avidity with which the soil takes up watery vapor is proportionate to its dryness—that is the dryer the soil the more vapor it will absorb The value of these facts to us is that in time of drouth when there is a lack of moisture in the soil and consequent available plant food the absorbing and condensing power of the soil is the greatest So that at such times more nutriment is taken from the atmosphere than at any other This is true not only of a few inches of surface soil but of the entire depth to which the soil has been drained

DECOMPOSITION OF VEGETABLE MATTER.

Vegetable matter in the soil is one of the important sources of its fertility Free air is the leading agent in its decomposition Cover vegetable matter with water thereby cutting off the supply of air and decay is at once arrested Saturate a soil with water, and keep it in this condition and the vegetable matter contained in it will decay very slowly if at all Vegetable matter comes from the roots of plants which grow in the soil, and from vegetable material which is turned into the soil by the plow As has already been noticed roots aid materially in effecting the porosity of the soil and in mixing surface soil with the subsoil Their decay furnishes no small amount of valuable plant food

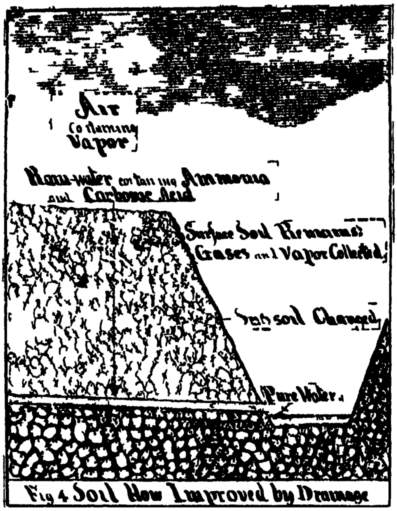


Fig 4 Soil How Improved by Drainage

What this amount is may, in a measure, be estimated by examining a well cultivated soil It will sometimes be found literally full of roots in all stages of decomposition

A German experimenter has found that the roots of the wheat and rye plant, when dried amount to from 24 to 60 per cent of the weight of the whole plant The distribution of roots is illustrated by Figure 2

By reference to Figure 1* showing the portion of roots which is used to take nutriment from the soil, we notice that root hairs are constantly decaying and fresh ones starting out so that there is a constant change going on from the time the plant first germinates until the frost of winter cuts off the supply of necessary heat Again if the soil is porous and nutriment well distributed the roots will likewise be numerous and distributed The same experimenter noted above observes that a barley plant in a rich, porous garden soil had a total root length of 128 feet while a similar plant in a compact, coarse soil had only 80 feet of roots In the soil figured and before referred to the writer found roots in the hard pan clay These decaying will add fertility which will be sought out by other plants and they in turn will leave their roots to feed others Thus the inert subsoil will gradually be converted into a more genial home for plants

CHEMICAL ACTION IN THE SOIL

The decomposition of vegetable matter in the soil just described is the result of chemical action, but that which we wish especially to refer to under this head is, that action by which the mineral constituents of the soil become reduced to that condition which is suitable for the nourishment of plants Could we look into the soil, and see the multiplicity of changes that are constantly taking place we should not by any means regard it as passive or inactive The soil is a vast laboratory in which inert matter is converted into plant food Drainage assists in these changes by bringing in the gases of the air, by increasing the temperature of the soil (which always hastens chemical action), and by regulating the amount of moisture. Little by little, and atom by atom, i thus added to the producing properties of the soil. It has been found that, other thing being equal, the producing properties of a soil are largely dependent upon the finenes of its particles. These are brought to its ultimate condition by chemical forces, which break up and change mineral constituents of the soil into that which is suitable for plants. Shut off the air and presence of other gases from the soil, by permitting water to saturate it, and we place a lock and key upon an important improvement of the soil. In short, chemical action is to the drained soil, what the garden rake and atmosphere are to the surface.

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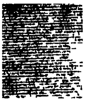
* Taken from Johnson s "How Crops Grow."



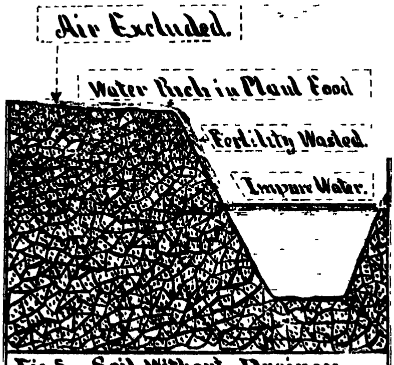


Fig. 5 Soil Without Drainage

UNIFORM SUPPLY OF MOISTURE.

A large quantity of moisture evaporates from the surface of the soil. Plants also need a large supply, and require it constantly during growth. The more uniform and constant is this supply to plants, the more perfect and satisfactory is their growth Considering the fact that our rainfall does not give a uniform supply, some regulating agent seems necessary, for the perfection of plants This we find to be drainage. To illustrate this point, let us use Figure 3 and suppose that the soil has been drained. The plant, and especially evaporation, have materially reduced the quantity of moisture near the surface; the soil below contains more moisture, and it now begins to ascend by passing from one particle to another, the tendency always being to give the whole mass of soil a uniform degree of moisture—just as when one end of a sponge is moistened the dryer portions soon become moistened also. In this way moisture is drawn up, as it were, toward the surface,—and yet the roots and plants are in a position most favorable for growth. Another means for maintaining the moisture of a drained soil is, the vapor of the air, which, especially during the night, is condensed, and forms dew in the pores of the soil. Roots, also, direct their course toward that which they need most, and so they penetrate the soil more deeply to obtain the necessary moisture.

SUMMING UP

Let us now sum up the benefits resulting to the soil from underdrainage. The first great benefit is the porous nature it gives to the soil which makes all of the other benefits possible. Water goes through the soil instead of over it, leaving in the soil and subsoil particles of fine earth from the surface, and also whatever nutritive matter it may have absorbed in the air. Air enters a drained soil, carrying with it whatever vapor it may have, and also gases of nutrition for plants. It decomposes vegetable matter and fits it for the roots of plants. It divides up particles of soil and makes them more soluble. Free gases are evolved, which go through the root into the structure of the plant.

The temperature of the soil is raised when the surplus water is withdrawn, and chemical changes take place in the mineral portions of the soil so that inert matter is converted into that which is fertile The supply of moisture to plants and to replace that taken off by surface evaporation, while at the same time there is ample room for the development of growing plant roots, is by no means the least benefit which results from drainage. Many other incidental benefits might be named, but these pertain directly to maintaining and improving the fertility of the soil. In examining somewhat fully this phase of the drainage subject, we are led to believe that a more minute and detailed study of it would well repay the investigator. In this paper we have treated of only the most salient points, yet these are sufficient, as we believe, to show the great value of drainage in increasing the stores of fertility in our cultivated soils. We apply water to the wheel and convert it into steam, to drive our mills and draw our loads of produce; let us also make it our servant in the improvement of the soil, instead of our master, as it often is. Shall the agricultural world fall behind the mechanical in utilizing the gifts of nature, when a way of doing so is so plain? Could these facts of drainage which are hidden in the soil, stand out so plainly as those upon the surface, I apprehend that no farmer would long content himself until he had made a beginning in draining such lands as need it. But we leave the subject bare of theoretical figure and highly colored wordy pictures, hoping that in this subject, as in many others, we may all find "truth stranger than fiction."

President D. O. Loy said—I believe making tile in winter pays. I have just commenced the winter making of tile with a brick building 32 x 120 feet. I think a frame building may be made sufficiently tight. I have 4000 feet of one inch gas pipe, but have more than I need; 3000 feet is sufficient. So far I am making tile as cheaply as in summer. I can cool my kilns in twenty-four hours, and burn two kilns in nine days.

The Association then proceeded to the election of officers, with the following result:

President, E. M. Pike, Chenoa.
Vice-Pres't, D. O. Loy, Monticello.
Secretary, D. W. Stookey, Buffalo.
Treasurer, John McCabe, Rushville.

The following resolutions were unanimously adopted:

Resolved, That the thanks of this Association are due and tendered to the several railways for excursion rates to this convention.

Resolved, That the thanks of this Association are due and are hereby tendered to the Secretary of the Illinois State Board of Agriculture, S. D. Fisher, and his assistant, Colonel Charles F. Mills, for services rendered and many acts of kindness shown to the members of this body.

Resolved, That we tender our thanks to Prof. G. E. Morrow, C. G. Elliott and others, for the addresses and papers prepared for the entertainment and advancement of the interests of the Association.

Resolved. That we tender our thanks to Dr. J. H. Rauch for his very able and exhaustive paper on "Sanitary Influence of Drainage."

Motion carried,

That a committee of three be appointed to prepare a programme and make necessary arrangements for the next annual meeting of the association.

The President appointed as said commitee, Col. Charles F. Mills, of Springfield, D. W. Stookey, and D. O. Loy.

On motion,

The Association appropriated $40.00 for extra copies of the Drainage Journal containing the proceedings of the convention, also the paper of Hon. S. T. K. Prime.

The Association adjourned to meet at Springfield on the second Tuesday in January, 1884, at 10 o'clock A. M.

F. D. Spalding,
Secretary.

D. O. LOY,
Vice-President.

FARMERS' INSTITUTE MEETINGS.

Held under the Auspices of the Illinois State Board of Agriculture.

The Board held but two Farmers' Institute meetings during the year 1882.

The first at Belleville, May 17 and 18, under the supervision of of Hon. David Gore, Vice-President of the Seventeenth Congressional District.

The second Institute meeting was held at Decatur, August 23 and 24, 1882, under the supervision of Hon. Wm. Voorhees, Jr., Vice-President of the Fourteenth Congressional District.

The programmes and organizations of these two Institute meetings are as follows:

BELLEVILLE MEETING—PROCEEDINGS.

BELLEVILLE, 10 o'clock A. M., May 17, 1882.

The meeting was called to order by Hon. M. T. Stookey, of Belleville, ex-Vice-President Illinois State Board of Agriculture, who nominated Hon. David Gore, of Carlinville, Vice-President of the Illinois State Board of Agriculture, as permanent chairman of the meeting.

There being no other nomination, Mr. Gore was, on motion, made permanent chairman by acclamation.

Mr. Gore on taking the chair said:

I thank you, gentlemen, for the honor conferred upon me by electing me to preside over your deliberations. While not an expert in parliamentary rulings, I hope, with your assistance and indulgence, to expedite business, and in a measure meet your expectations as chairman of this meeting.

This meeting is held under the auspices of the Illinois State Board of Agriculture. President Scott, in his annual address to the Board last January, recommended the holding of Farmers' Institute meetings in various parts of the State, as a means of emulation and instruction to progressive farmers.

The committee to whom the address was referred, reported by resolution, which was adopted by the Board, recommending the holding of at least one institute meeting in each Congressional district of the State during the coming year. It was my desire to hold the meeting in the Seventeenth Congressional District early in the season, when farmers were not so busily engaged as at present. The delay was owing to the failure of the committee on Industrial and Agricultural Education to prepare a programme as contemplated by the Board. As soon as practicable after the arrangement of the programme was referred to the Vice-President of each district, with the assistance of ex-President Gillham, ex-Vice-President Stookey and Secretary Fisher, the programme of this meeting was prepared and published.

This meeting is the first of a series of Farmers' Institute meetings to be held in the several Congressional districts of the State by the Illinois State Board of Agriculture. It is very appropriate that the first meeting of this character held under the auspices of the State Board of Agriculture should have been appointed at Belleville, the center of the richest and most productive agricultural district in the State. This section is covered with the most fertile and responsive soil, and is underlaid with unlimited quantities of the best quality of soft coal and valuable building material. The farmers of the Seventeenth Congressional District compare most favorably with the tillers of the soil in other parts of the State in influence, culture, thrift, frugality, and productive capacity.

These Institute meetings have wisely been ordered by the Board in each Congressional District. The papers read and discussions following will doubtless encourage all in attendance to more earnest thought, and stimulate investigation and experiment. A large number of persons not present will have an opportunity of reading the published proceedings hereafter, and be correspondingly benefited. The farmers of Illinois are progressive and enterprising, and need but little well-directed effort through such Institute meetings to encourage thought and action.

The attendance at this meeting gives assurance of a profitable session, and of the necessity of such gatherings.

Again thanking you for the honor you have conferred upon me, I await your further pleasure.

On motion of Mr. Gillham of Madison,

E. M. West, of Belleville, and Charles F. Mills, of Springfield, were made Secretaries.

Motion of Mr. Stookey carried, that a Vice-President be elected to represent each county in the 17th Congressional district.

The following gentlemen were nominated and elected Vice-Presidents:

Madison county, Henry C. Lanterman..... .... .Edwardsville
Macoupin county, George Hilliard.........................Brighton
Monroe county, John W. Drury.......... .... Waterloo
St. Clair county, Edward Abend.. .... Belleville

The President: It affords me much pleasure to introduce His Honor, Benjamin J. West, Jr., Mayor of the city of Belleville.

ADDRESS OF WELCOME BY THE MAYOR.

Mr. Chairman, and Gentlemen of the Agricultural Convention of the Seventeenth Congressional District:

It gives me much pleasure to welcome you to our city, and permit me to do so in the name of the citizens of Belleville. You have assembled here in convention, at the capital of this county, situated near the center of one of the richest and most fertile districts of the great Valley of the Mississippi, if not of this great agricultural country You assemble to talk over and exchange ideas upon a subject of great importance to this nation, and particularly so to the people of this wonderfully productive country; its progress and its development having surprised all countries.

But a few days ago the citizens of our sister city, St. Louis, in a fit of becoming hospitality, welcomed a small band of brothers remaining of the Army of the Tennessee. It was my pleasure to meet with them there, and to an extent, participate in their festivities. To see that time-honored chieftain, General Sherman, whose hair is now silvered with the shades of matured years, surrounded by a number of noble and patriotic soldier aids, assembled in that great metropolis, to count faces and recount the experiences and incidents of the late civil war, meeting together in common with the people, was, indeed, a camp scene and memorable sight, that I shall never forget.

To-day, gentlemen, we meet you, the representatives of a peaceful and prosperous people, living in the sun-light of, and enjoying the blessings that these great soldiers secured and guaranteed to us. We welcome you as the representatives of the husbandman, and assure you that we appreciate the motives of your assembly, as well as the fact that the great advancement in the art and science of agriculture has been so wonderfully developed during the last quarter of a century, which is attributable to the time and thought devoted to its researches by our husbandmen and tillers of the soil.

To some of you the great changes during your own experiences must be a subject for pleasant memories Some of you can, no doubt, remember the little cabins as they stood among the forests of a then almost wilderness, erected in the pioneer days of this valley by our forefathers; the smoke, as it circled around that cabin roof and ascended heavenward, would to-day be a beautiful and interesting picture for us to look upon. The wooden and primitive plow-share, drawn by the old ox team, ofttimes guided by the helping hand of the noble and true women of those days, would, indeed, seem like a fable if compared with the long list of improved implements as used by the young farmer of the present day.

Gentlemen, you meet to-day, not upon soil like the barren fields of some foreign lands where people have in times past carried in baskets and upon their backs earth with which to create garden spots, where Nature seems to have denied them the rich deposit of a fertile soil; but, happily for us and our posterity, we meet within the realm of one of the grandest wheat, corn and fruit-producing districts upon God's green earth. The mind cannot compass the immensity of the broad fields of these cereals, bending and waving with their heads of golden wealth, so soon to be reaped and garnered into your granaries.

Great credit is due you, and the gratitude of nations has been bestowed upon your profession, who, during the past few years, have made such wonderful improvement in the science of agriculture. In this county, with its 65,000 inhabitants, with its flourishing towns and villages dotting our hilltops and valleys; with its mills, manufactories, foundries and workshops, to be seen everywhere in this the centre of this great productive farming country, underlaid with millions of tons of coal, you, gentlemen, have met. I bespeak for you a cordial welcome among our people, and trust that your stay in our city will prove profitable and pleasant.

RESPONSE BY HON. D. B. GILLHAM, EX-PRESIDENT ILLINOIS STATE BOARD OF AGRICULTURE.

Mr. President, and Gentlemen of the Farmers' Institute of the 17th Congressional District of Illinois:

I would that a more eloquent tongue than mine had been selected to respond to the beautiful sentiments so feelingly expressed in the address of welcome by the Honorable Mayor of the city of Belleville.

If there is anything that I have never been accused of, it is eloquence, and yet, dumb indeed, and inappreciative, would he be who could not draw inspiration sufficient to say something thereto.

When the resolution, requiring each member to hold one Institute meeting during the year, in his Congressional District, was adopted by the State Board of Agriculture at the last winter meeting, I was selfish enough to feel that my own county was the point, above all others, for such a gathering, as we are all more or less selfish; but when our member, Mr. Gore, informed me that St. Clair county desired and claimed it, I felt, upon due consideration, that it was right, and I wrong, and I determined to do what I might for its success.

The city of Belleville, the seat of justice of the grand old county of St. Clair since 1814, is surrounded by a country of unsurpassed fertility, and, as a consequence, is very wealthy, and doubtless the most accessible point in the district.

The county, the venerable mother of counties, was organized by a proclamation of the Governor, whose name she bears, while yet in the swaddling clothes of ante-territorial existence, and populated by the children of the forest and a few French.

The county has been very fortunate in the classes of inhabitants that have peopled her territory, first in the innocent and mirth-loving French, which gradually intermingled with the native Southerner, and then in a great influx of the noble Teuton, who, early in the present century, came in such numbers as to materially change the leading features of her society, from those of the French and Southerner, and gave it the impress of the German character, which she maintains to this day, and whose industrious, frugal and energetic habits have contributed largely to her prosperity.

The old 17th Congressional district, comprising Macoupin, Madison, St. Clair and Monroe counties, is, in point of territory and agricultural and mineral wealth, a veritable empire.

Larger, in area, than several States in the Union, and teeming with a population as intelligent and energetic as there is on earth, she is capable of feeding, from the products of her soil, as reported for the past two years, a population equal to that of Great Britain and one-half of France, for a single year.

The amount of bread grain produced, in this district alone, is over thirty-seven and one-half millions of bushels, leaving out the hay, oat, rye, fruit and other vegetable products, and the products of her pastures, in milk, butter, cheese and meats, besides mineral wealth sufficient to cook for and warm the earth's population for 1,000 years

Truly, the centre of this section of great prosperity is a fitting place to hold an Institute meeting, for the purposes of exchanging views as to methods of conducting this vast enterprise; presenting to each other the benefits of past experiences, interchanging of opinions regarding the future, and, as producers, to note progress and take lessons from the world of business about us.

And now, Mr. Chairman, I have occupied enough of your valuable time.

We are here for business, and not for speech-making or fun.

The mayor has called our attention to our obligations as citizens of a great republic; has told us of the possibilities of a great country, and has encouraged us by kindly words relating to the importance and progress of the vocation in which we are engaged. He has, in most earnest and cordial expression, welcomed us to the hospitalities of this prosperous and beautiful city, and I will close this disjointed speech,—which my honorable friend, Mr. Gore, ought to have made,—by congratulating his honor, and the city he represents, upon her present prosperity, and her cheering prospective future.

PROGRAMME.

WEDNESDAY, MAY 17.

MORNING SESSION.

Nine O'clock A. M.

Address of Welcome.................. ....by the Mayor of Belleville
Response.....................by Hon. D. B. Gillham, ex-President State Board of Agriculture

ORGANIZATION.

Ten O'clock A. M.

Illinois Agriculture...............N. S. Gay, President Madison County Farmers' Club, No. 1

Eleven O'clock A. M.

Improved Stock..Col. Charles F. Mills

AFTERNOON SESSION.

Two O'clock P. M.

Agricultural Statistics. ....Hon. S. D. Fisher, Secretary State Board of Agriculture

Three O'clock P. M.

Mixed Husbandry ....Hon. E. M. West, Belleville, Illinois

Four O'clock P M

Manures and their Application .... James Miller, Belleville, Illinois

EVENING SESSION.

Eight O'clock P. M.

Agricultural Education. ... Prof. Geo E. Morrow, Dean Illinois Agricultural College, Champaign, Illinois.

THURSDAY, MAY 18.

MORNING SESSION.

Nine O'clock A. M.

Grapes and Wines .... Col. Adolph Engelman, Shiloh, Illinois

Ten O'clock A. M.

Gathering, Packing and Marketing Fruit. .... Capt. E. Hollister, Secretary Alton Horticultural Society.

Eleven O'clock A. M.

Horticulture.........................Hon. John M. Pearson, State Horticultural Society

AFTERNOON SESSION.

Two O'clock P. M.

Ditching and Drainage........................... Prof. J. B. Turner, Jacksonville, Illinois

Three O'clock P M.

Agricultural Fairs... ... ... Hon. D. B. Gillham, ex-President State Board of Agriculture

DECATUR MEETING—PROCEEDINGS.

DECATUR, August 23, 1882.

The meeting was called to order by Hon. J. G. Willard, President of the Macon County Agricultural Board.

On motion,

Hon. Wm. Voorhies, Jr., Vice President of the Illinois State Board of Agriculture for the Fourteenth District, was made chairman of the meeting.

Mr. Voorhies, on taking the chair, said:

GENTLEMEN—I thank you for the honor conferred in selecting me to preside at this meeting, which I called at the suggestion of our Board, for the purpose of promoting the agricultural interests of this district. Our object is to bring together the practical farmers not enjoying the advantages which a knowledge of the success in approved practices would impart, to receive and communicate to each other new methods of profitable agriculture.

The farmer, unlike other artists who have secrets, desires to inform and instruct his friends. In agriculture new discoveries seldom occur, but when new theories have been proven of value by practical test, they are published for the benefit of all concerned. Our most prosperous farmers owe their success more to industry, economy and the lessons resulting from experience, than to the theorist; yet we must not suppose that none are familiar with agriculture except those who follow the plow and sow the seed. We are greatly indebted for some of the most valuable results in agriculture to the students of philosophy and sciences, as applied to the art of practical husbandry. Those students have demonstrated and made public some of the most important facts relating to the duties of farm life, which are now quite generally practiced by successful farmers.

Your attention will soon be invited to papers prepared by men who have made the science of agriculture a study, and will be able to explain them and their practices intelligently

The meeting is now ready for business.

The following gentlemen were then nominated and elected Vice Presidents of the meeting:

J. G. Willard	Harristown, Macon county.
E. E. Chester	Champaign, Champaign county.
Wm. Miller	Charleston, Coles county.
J. H. Oakwood	Catlin, Vermilion county.
Jesse Warner.	Monticello, Piatt county.
Isaac Cosler	Tuscola, Douglas county.

On motion,

M. B. Thomas, of Decatur, was made Secretary.

The following was the programme of the meeting:

MORNING SESSION.

Nine O'Clock A. M.

ORGANIZATION.

Address of Welcome	His Honor, the Mayor of Decatur.
Response	by Hon. J. R. Scott, President State Board Agriculture.

Ten O'Clock A. M.

Agriculture as a Profession	by Hon. C. A. Ewing, of Decatur

AFTERNOON SESSION,

Two O'Clock P. M.

Flax Culture and its Uses	Hon. H. Kœlkenbeck, Chicago, Ill.
Engineering for Drainage	Prof. J. O. Baker, Industrial University.

EVENING SESSION.

Eight O'Clock P. M.

Industrial Education.	Prof. E. H. Peabody, Regent Illinois Industrial University.
Illinois Horticulture	Hon. Jonathan Periam, Prairie Farmer, Chicago.
Agricultural Fairs	Hon. H. D Peters, Monticello, Ill.
Dairy Farming	Prof. George E. Morrow, Dean Illinois Agricultural College.
Draft Horses	Charles F. Mills, Springfield, Ill.

ADDRESSES

Delivered before the Farmers' Institute Meeting at Decatur.

FLAX CULTURE, AND ITS USES.

By H. Kœlkenbeck, Chicago.

The subject to which I wish to call your attention for a short time, is of greater importance than is generally supposed. That it is greatly undervalued, is apparent from the fact that perhaps no branch of husbandry is, at present, so neglected—carried on in such slovenly, careless manner as flax farming. During a short visit I have just paid to Bates county, Mo., I have seen several flax fields so utterly overgrown with weeds, that the owners thereof very wisely decided not to harvest them, (the crop would have consisted of at least seven-eighths of weeds) but to plow them under and to try, as they said, to do better next year. Thus their labor and outlay on these fields were utterly lost, and it is not surprising that such farming does not pay.

But to return to my subject, I shall consider it under three aspects, and endeaver to show.

First—The importance of the flax crop to the western farmer by the result obtained in the flax producing countries of Europe.

Second—The decadence into which flax culture has fallen in the Western States.

Third—The remedy to the present state of things, and how to make flax-farming as profitable as it is in other countries.

I.

The importance of the flax crop from the standpoint of its productiveness, may be best judged from the following statistical figures relative to the principal flax growing countries of Europe, namely:

The total estimated area, devoted to flax culture in the countries of Europe, in 1880, was 3,344,329 acres, producing 487,675 tons of fiber, valued at $108,408,000, exclusive of immense quantities of seed for sowing and oilcrushing; whereas the States west of Pennsylvania, namely, Ohio, Indiana, Illinois, Missouri, Kansas, Wisconsin, Iowa, Minnesota and Nebraska, having a total area appropriated to flax of over 1,127,000 acres, produced only about 9,500,000 bushels of flax seed, valued at $9,500,000.

Thus, while the flax crop in Europe yields to the farmer on the average about $32 50 per acre, exclusive of the seed, which may be put down at $7 50, total $40 per acre, the western farmer barely makes $9 out of an acre of flax, and that only when the season is favorable and no excess of rain or drought spoils the crop. These figures are too eloquent to dispense me from adding any commentary on the subject, except that it is high time for the western farmer to turn over a new leaf, and try to follow the example of his European colleague in the profitable cultivation of flax.

II.

The decadence of flax culture in the States enumerated above, is best demonstrated by the samples of flax fiber produced in various countries of Europe, which I have laid before you; their commercial value varies from $275 to $475 per ton, whereas the highest price which can be made out of the flax straw produced in these States, by turning it into tow for upholstery, paper stock, twine or material for cotton bagging, is about $40 per ton. These figures again show that a radical reform in flax culture is an urgent necessity if we would claim for our husbandry the qualification of rational and intelligent; and I may add here that of the flax straw produced on the immense area stated above, of 1,127,000 acres, which may be estimated at over 1,000,000 tons, only one-fifth is turned to account, even at the above low price, while about 800,000 tons are annually burned, left to rot in the field, or used for thatching, and this fact again speaks loudly enough that there is something rotten in the State of Denmark.

It was, however, not always so. Until about 1850, flax was grown on almost every farm in the older States, and the fiber was rotted, broken, scutched, spun and manufactured at home into linen and converted into articles of clothing, and consumed for household purposes. Although it is very unlikely we shall ever return to the habits and customs of our forefathers of the last generation, as regards the treatment and handling of flax and turning it into articles of clothing, we shall do well in imitating their example as regards the careful cultivation of the flax plant. They knew the great value of the fiber, whereas at the present time it is thrown away and wasted as worthless. This brings me to part

III

of my subject, as to the remedy to the present state of things, and how to make the flax crop as profitable as it is in the countries of Europe. The only remedy, and one which can be easily applied, is to abandon at once the slovenly and careless manner in which the flax crop has been treated hitherto, beginning at the preparation of the land until the seed is put into it. One great evil I have observed in almost every flax field in these States is that the land is allowed to be totally overgrown with foul weeds. These are the greatest enemy to the flax crop, even when seed raising alone is the object, for they rob the land of the nourishment which the flax plant requires; but they are more objectionable and injurious when flax is grown for the fiber, because the weeds, at harvest time, get so entangled with the flax fiber that it is impossible to separate them, and thus the value of the flax straw is greatly diminished.

I shall now give a few of the leading points for the proper management of the flax crop:

Soil and Rotation.—By attention and careful cultivation, good flax may be grown on various soils, but some are much better adapted for it than others. The best is a sound, dry, deep loam It is essential that the land should be properly drained and subsoiled, as, when it is long saturated with either underground or surface water, a good crop need not be expected. In selecting land for flax, it is desirable to have it as flat as possible, with a cool bottom—hilly land will not produce flax of a uniform reed The proportion of land to be devoted to flax depends on the farmer's capability of keeping up the condition of the land On farms up to 40 acres the extent of flax should not exceed one-tenth, and, as the farm increases in size, the proportion of flax may be extended, but not greatly in excess of this ratio

After potatoes, or old pasture off which one grain crop has been taken, a good flax crop may be grown; flax should, on no account, be grown oftener than once in five years on the same land, and once in seven is considered safer, unless its fertility is kept up by sufficient manuring.

The preparation of the ground—This will depend much on the character of the soil. A deep, fine tilth is essential. A light plowing immediately after harvest is required for all soils, but if they be heavy and stiff, they should be laid in ridges before winter, and thus to remain until a fortnight before sowing, when they should be deeply plowed. The soil should allow the roots to penetrate to one-half the length of the stem above ground. Light soils may have their last plowing before the setting in of winter.

The use of green stable manure is to be avoided, on account of the ungerminated seeds contained in it. It is asserted that, in newly cleared lands, the ashes from the burned wood and brush is highly beneficial. The extent of pulverizing depends on the nature of the soil— on light and medium, excessive pulverizing does injury; heavy land, on the contrary, will bear any degree of pulverizing. After every harrowing, pick the land perfectly clean of weeds and remove any large stones that may be on it.

Sowing.—Previous to sowing, roll once; a dry calm day must be chosen for putting in the seed. As to the time for sowing, much depends on the latitude; in the south it may be safe to sow in the beginning of April, whereas in the north a month later may be the proper time for sowing, on account of the late spring frosts. The farmer must use his own judgment in this respect.

The selection of seed is an important factor in the production of a good flax crop. Seed is thought to be of good quality when it is bulky and heavy, the faces of each seed being equally swollen and convex; the color should be uniform, and the skin smooth and brilliant; it should sink easily in water, and when burnt, it should consume with clearness and rapidity. But above all it should be perfectly clean from all obnoxious weed seeds, which infest the land, cause much labor in weeding and great injury to the crop. Seeds should be selected according to their degree of cleanness, and the cleanest preferred; it will be the cheapest in the end. It should be further cleaned by fanners, or by being passed through a wire sieve, which has twelve bars to the inch, so as to remove all impurities or imperfect seeds. I also think it of much importance that next season flaxseed from distant regions should be sown, as for many years no renewal of seed has taken place in the United States. In the flax-growing countries of Europe, the seed is renewed every year; Ireland, Belgium, France and Germany sow Dutch and Riga seed; Holland mostly sows Riga seed, although her own seed is excellent, and is largely sown in the above named countries Arrangements are in progress to import and supply the farmers who may desire it, with the best brands of Dutch and Riga flax-seed. If flax is sown for *the fiber and the seed,* at least two bushels should be sown to the acre; if for the seed alone, three pecks or one bushel will suffice. The latter quantity will give a better result than half a bushel, as has been the habit hitherto in the western States. It must be evident to every farmer that the present price of 85 or 90 cents, does not remunerate him for his labor and outlay. That the price should be so low, is the effect of a combination of oil crushers and seed dealers, for East India seed is at present quoted at $1.85 to $1.90 per bushel in New York, and that seed is by no means 100 per cent. better than American seed. Oil crushers pretend that overproduction causes the low price of western seed; let the farmer, therefore, produce *fiber* in preference to *seed*, and the price of the latter will advance, while the value of the former will considerably increase the yield of his flax and.

Flax straw as feed for cattle.—I have been repeatedly told lately by farmers, that flax straw is liked by cattle, and that they thrive on it. I decidedly think this is a mistake, and that flax, that is the straw, has never been intended for that purpose by the Creator. The mistake has probably arisen in this way.

Cattle having been allowed to go to the stack of flax-straw, looking for food, have found therein a good deal of seed and plenty of grass or other plants, and thus the supposition has gained ground that they liked the flax-straw On the other hand, I have heard of several well authenticated cases which have happened in Missouri, where several valuable heads of cattle having died, there has been found in their stomachs large balls of lint, which, being, of course, indigestible, is supposed to have caused their death. I shall submit this question to authorities in the United States and in Europe, and make known the result of my inquiries.

Flax should be harvested before it is quite mature; when the lower part of the stems begins to assume a yellow color, and the seed capsules are formed, and the seed begins to change from a green color to a pale brown, it is the proper time for harvesting the crop. If the flax be left standing until the seed is fully matured, the fiber will not be so good. The seed will ripen sufficiently if not detached from the plant until dry, as the sap contained in the plant contributes to the further perfecting of the seed. This system is followed in Russia and in Holland with perfect success, and both countries produce large crops of fiber and seed.

I wish to mention here that Holland produces two kinds of flax, namely, blue blossom and white blossom. The former has a fine fiber, but less seed; the other a coarse fiber, but a larger quantity of seed. Both sorts will be imported and placed at the disposal of farmers who desire to avail themselves of the opportunity of making a trial with foreign seed, the result of which, under proper cultivation, cannot fail to be in the highest degree satisfactory.

I have been unable in this short article, to give more than an outline of the highly interesting subject of flax-growing, hoping that it may induce farmers to give it their serious attention, for their own interests' sake; but I cannot conclude this sketch without pointing out that the solution of a great National problem is intimately connected with this subject, and lies entirely in the farmers' hands, namely: whether we are to have a National linen industry, or are we to continue paying annually from thirty to forty million dollars to foreign countries for raw flax and flaxen products which we have to import, while our own soil is capable of producing all the raw flax required for manufacturing those linen goods, leaving at least $25,000,000 worth of raw flax available for export to Europe.

I trust the year 1883 will witness a new departure in flax-raising, not only in Illinois, but all over the western States, which will inure to the great advantage of the country in general, and of farmers in particular.

AGRICULTURE AS A PROFESSION.

By C. A. Ewing, Esq.,

Mr. Chairman and Gentlemen

I have been honored by the member of the State Board of Agriculture for this District by an invitation to address you, and I esteem it a great pleasure to sit in such a convention as this, and to contribute, however slightly, to its work.

It is natural and easy, in addressing a body of farmers, to discourse almost exclusively of the material and economic features of their calling. There is an endless fascination in such themes.

We talk corn, every man of us, from planting time until it is all sold, and then we start in on the new crop.

And no wonder, for it is the mainstay of the country, and in every phase it is full of beauty.

The earth is plowed, and harrowed, and rolled, until it lies clean, soft and brown, in level stretches and gentle undulations, as far as the eye can reach; and then the corn lays upon it in parallel stripes of living green; and what a lovely robe nature wears!

In June and July we look down upon and across a sea of corn. The light dances and sparkles upon it as on the tossing water, and the wind pressing upon its face, rolls it in long waves of light and shade to our feet Then, in the autumn and winter it lies in great heaps of solid yellow treasure. It is a beautiful product, from its tender infancy to its maturity.

And how we love to discourse upon tile drainage. Here we come to the joy of discovery. We thrust the slender tubes into the fat earth, and we add forty acres to the quarter section. We put a new acre under each old one; we change the climate of the soil, and import the warmth of a milder zone; we open a new region for the roots of the plant, and invite them to search for the gold that later crowns the fields. Men who can not analyze or explain the sensation, experience, and in some way express, their enjoyment of such acquisition. How often do we hear them, when they have drained a pond, say, "It is just like finding so much land."

They are as happy as children on the seashore gathering shells, or miners in the mountains striking the rich ore.

But it is not to such views that I would direct your attention to-day, but to the farmers themselves, and the influence which their avocation has upon them, rather than upon their fortunes.

It has become the almost universal usage of men to speak of the practice of the law, medicine and of theology as the professions, and to designate those who follow them as professional men. As a matter of practical distinction, it is perhaps well enough and convenient to conform to this usage. But any man's avowed and uniform calling or occupation is his profession, and if there is a superior dignity, either inherently or in the popular acceptation of the term, there is no one who may, with greater propriety, honor his vocation by calling it his profession, than the American farmer. As a class, they have certain characteristics which are well-known and clearly defined. They are deliberate. Their yearly enterprises depend upon the gradual processes of nature. They watch the growing grain from seed-time to harvest, through long months, or the young animal from its birth to maturity. It is not their daily vocation to observe the fluctuations of trade, the passing fashions, or the changing humors of men, that they may seize the fleeting opportunity and outstrip a keen competitor. Hence, they are not so alert, eager, versatile or adroit as townsmen. In business transactions they do not incline to be quick, and they ought not to allow any one to hurry them. Beware of the man who has not plenty of time for what he would do with you. They do not excel in fine distinctions. They are not subtle, but they are direct. They call things by plain names. They do not deal so much as those of some other vocations with the intricacies of human character and conduct. They are, therefore, more likely to be momentarily deceived. There is a certain broadness, rather than exactness, in their judgment, manners and tastes. But essential differences, such as that between right and wrong, justice and injustice, honesty and dishonesty, they do not ignore or complacently overlook, as the more crowded or fashionable world is too often wont to do. A refined name does not, with them, extenuate a base thing, or a cultured bearing soften their condemnation of a bad man. But while, as a class, their judgment is neither the quickest nor the most delicate in its shadings and discriminations, it is eminently sound. It has the sturdy, healthy quality of a strong tree which has grown gradually to the sunlight and the free, open breeze, to large proportions and toughened fibre

The farmers of the country are the great body of triers. The usefulness of almost every new invention depends ultimately upon their approval Public men and public measures stand or fall at last by the farmers' votes. The mass of our jurymen are drawn from them.

You will often hear a lawyer, if he has a good case, say with satisfaction, "I have a good jury of substantial farmers." If his case is not good, the satisfaction may not be so evident. Then he would just as soon get rid of the regular panel, and take his chances among the city gentlemen of leisure, who adorn our halls of justice, on the outside seats, from day to day, and all day long.

In the formal preparation of our cases for trial, when everything has been put upon paper that need be, when the cause of action is fully set forth, or the defense fairly alleged, if the question of difference is one of fact, we close and present the issue by saying, "And of this the plaintiff [or the defendant] puts himself upon the country," or "This he prays may be inquired of by the country."

And so we do, and the country, as distinguished from the town, generally settles our rights and our wrongs.

And what is it that gives the farmers this judicial character and function? It is their deliberation, their caution, their earnestness, their integrity, and, above all, their independence and individuality.

The man who has from eighty to a thousand acres as his own field of operations, of which he is lord and master, is not likely to stand much in awe of another. He spends his days and his energies upon his own domain, and does not need to advertise his wares, to cajole customers or court patronage. It is not his servile lot to "crook the pregnant hinges of the knee, that thrift may follow fawning." He may hold his own opinions and utter them boldly. How many tradesmen dare not !

The American farmer who owns the land he tills, and is not in debt, is the freest man on the round earth He has a chance to be, and often is, a free and vigorous thinker. The power of clear, strong and direct thought grows with its exercise, and with a practical conformity to its conclusions. The habit of reasoning things out to a just result by the application of sound general principles, and of fearless, consistent action, simplifies and dignifies the life and ennobles and strengthens the mind.

The universal practice of appealing to you, gentlemen, as the court of last resort, in all public questions and private controversies, is the general testimony to your strength and nobility; and you are thus honored, not because you were fortunately born what you are, but because your profession has made you so.

It was not always thus. The time was when kings alone decided all things. They made war or peace. They granted or withheld liberty. They fostered or destroyed commerce. They trimmed the lamp of science, or extinguished its light. Then the greater and lesser lords modified or thwarted kingly councils, but the people were nothing. At length a great advance was made. At the battle of Courtrai, in 1302, 20,000 untitled men defeated the king of France, and his knights and followers sixty thousand strong. But it was the sturdy weavers and other artizans of the Flemish cities who did it. The farmers steadily followed their primitive plows in sight of the battle-field, and through all those dark, tempestuous centuries, when men were struggling and dying in the weary conflict between the right and the crown, it was the free cities of Germany and the Netherlands, the chartered communes of France, the train-bands of London, the scholars, the lawyers, the reforming clergy, and at last the poor, frenzied mob of Paris, that bore the blows of tyranny—that won the victories of liberty.

The farmers gained but little glory then. Their calling then was not an honored and ennobling profession. If it had been, the pages of history would have told a different story. It was only here in free, republican America that the farmers, as a class, have come to be what they are—the mainstay of the government, the repository of the nation's justice, the guarantors of the people's welfare. The liberty they here did so much to win has in turn done much for them. May their influence never be less.

A few years ago the Grangers in this State and in Wisconsin, and elsewhere, gave the railroad corporations the only check and defeat that their growing and dangerous power has ever sustained. But lately the town and the country were pitted against each other upon a great political and moral issue in Iowa, and the country won. And if a similar question has yet to be settled in this State, I, for one, trust that it may be determined by the fearless judgment and in the wholesome atmosphere of the country hustings.

Gentlemen representatives, you are of a profession which makes its members so worthy. I doubt not that this institute is inaugurated by you both to enrich and enlarge yourselves. You will unquestionably derive pleasure and profit from the discussion and development of matters tending directly to the success of farming as a business—drainage, fat cattle, the dairy, the draught horse and the road horse, the grains, house building and barn building, and all subjects that will naturally and profitably occupy your time. Will you not also find it to your advantage to give some attention to topics not peculiar to your vocation, but of general interest to intelligent men of all callings? You might secure addresses, by competent persons within or without your body, upon questions of science, philosophy, current and past history, political economy and kindred subjects, and engage in the discussion of them profitably. To broaden by the best means the range of our thought and knowledge, is consistent with the true spirit of a liberal profession.

In the outset of your enterprise, I make this suggestion with the desire to do what I can to contribute to your success. The necessity of a frequent recurrence to fundamental principles is recognized in our bill of rights. It is so with societies and individuals. To drop details and contemplate general truths is necessary in order that we may take our bearings and relation to men and things, and maintain true standards.

With this view, I have used the time which you have afforded me in urging upon you a high conception of what you are, and of the relation which you sustain to the community and the nation on a level above the plane of the grain or stock market; and I would have you remember that from your noble profession there comes to you an increment of character of more enduring value than the richest harvests or the choicest herds.

I trust that in pressing these considerations I have given evidence of a proper appreciation of the honor you have conferred upon me.

I wish the Farmers' Institute of this district abundant and lasting success.

CROP AND LIVE STOCK STATISTICS.

To the State Board of Agriculture:

The committee beg leave to submit the following tables giving the area, yield and value of the several crops harvested in this State the past year, and recommend their publication in the forthcoming annual report of the Board. (See page 339).

The usual tables concerning the animal industries of the State for the closing year are presented.

While the returns of agricultural statistics are much more complete than heretofore, they are far from satisfactory, and so negligent are assessors in some counties that your committee recommend that the committee of this Board on legislation be instructed to prepare a bill to be presented to the next General Assembly providing for a reasonable compensation for performing the work and a sufficient penalty to be imposed in case of failure of assessors and others to make full and accurate returns of all the data called for in the blanks for agricultural districts.

The assessors' blank used in 1882 is recommended for the year 1883 without change.

Jas. R. Scott.
D. B. Gillham.
S. D. Fisher.

CANADA THISTLES.

An act concerning Canada Thistles, approved and in force March 15, 1872, provides that—

"The commissioners shall, annually, before the first day of November, make a written report to the supervisor of the town, or to the county commissioners, as the case may be, which report shall be filed with the town clerk, or, in counties not under township organization, with the county clerk. The report made to the supervisor shall be publicly read at the annual town meeting. Said report shall state—

"*First*—Whether there are or not any Canada Thistles growing in the town or precinct.

"*Second*—If any are growing, where, and how many, and when and how introduced.

"*Third*—A detailed statement of his treatment of each infected tract, with cost and result.

"*Fourth*—He shall report such other matters as may be required of him by the board of town auditors or by the county commissioners.

Fifth—He shall state his views on their further treatment, and make such suggestions and recommendations as he may deem proper and useful.

"And he shall also forward a copy of said report to the Secretary of the State Board of Agriculture, who shall collate and report the same to the Governor by the first day of December of each year."

The act in relation to Canada Thistles has been observed to a very limited extent.

The following are the only reports made to the Secretary of the State Board of Agriculture for the year 1882:

LA SALLE COUNTY.

Report of **Asa Dowling**, Commissioner Canada Thistles, Meriden Township.

I would report that there are Canada thistles now growing in the town of Meriden, LaSalle county, Illinois, on the farm of A. H. Carr, on section 29; that the same were introduced about twenty-five years ago, by Emerson Branch, from Vermont, in seed barley, and that my treatment of said tract has been the past summer to cut them off as often as possible, salt them *thoroughly* and *pasture* them *closely*. There are also other tracts in the village of Meriden that I gave treatment, by digging as deep as convenient, and then salting, and I think that if that course is pursued thoroughly for a term of years they may become eradicated.

M'HENRY COUNTY.

Report of **AHIRA THOMPSON**, Commissioner Canada Thistles Coral Township.

This is to certify that I have canvassed the township of Coral, McHenry county, Illinois, for the purpose of ascertaining the number of plats of Canada thistles in said town, and have found 115 patches, of which 40 have been killed. I have done all in my power to stop the spreading of the thistles--they can be killed if salted thoroughly.

I wish to urge the necessity of further legislation on this important question of Canada thistles. The word "may" should be changed to "shall," thus compelling the appointment of a commissioner in every township. The thistle is increasing to an alarming extent in the Northern part of the State.

M'HENRY COUNTY.

Report of **A. BOURNE**, Commissioner Canada Thistles, Dorr Township.

In pursuance of the statute I make this, my report, as Commissioner of Canada Thistles for the town of Dorr, in accordance with the one made to the Supervisor of our town. I have found seventy-eight patches, varying in size from one thistle to one-half acre. All parties seem anxious to get rid of them, and have joined cheerfully in an effort to destroy them. In some cases renters have not been thorough in preventing them all from going to seed. I have had reports from sixty-seven patches; forty-four have been cut, four plowed, five pulled, two well dug up, twelve salted, (no report from eleven.) I have endeavored to find by inquiry and investigation the best method of destroying them. Those using salt have been most successful. I consider brine better, from the fact that the plant is sure to get the salt. Some destroy them by carefully watching the patch, and cutting every young shoot as it appears above ground. This method is considered sure if followed for two or three years. Thistles were first brought here by nursery men and emigrants feeding their teams by the wayside, long since.

As this is my first year my effort has been to stop the further spread of the noxious weed and learn from inquiry and experiments the best methods for destroying the thistle. I hope to be able to make a better report the coming year.

M'HENRY COUNTY.

Report of **JOSEPH J. PARKER**, Commissioner Canada Thistles, Greenwood Township.

The undersigned Commissioner of Canada Thistles for said town would report that said thistles are found growing in said town on some twenty-five farms. The general opinion as to how they came, is by the wind blowing the seeds.

Some have killed them and found other patches, and a few have killed them out on their farms.

I have killed six or seven different patches on my farm; those in small patches by cutting them up and putting salt on the roots or by plowing them a few times in the season, or when but few come up by pulling them and putting salt on the roots.

One man cuts them near the ground and puts a few drops of kerosene oil on each stalk; this has proved effectual. The sure thing to do is not to let them grow above ground, and they will soon die. I believe the present law should be enforced and that our State Legislature should pass a law with the penalty five times greater than it is now for letting thistles go to seed. The most of the farmers that have time in our town are trying to kill them, and it is manifestly unjust to them for a few negligent ones to allow them to spread.

M'LEAN COUNTY.

Report of JOHN T. JOHNSON, Commissioner Canada Thistles, Lawndale Township.

The undersigned would report that in the county of McLean, Lawndale township, on the farm of Jesse Chism, on the s. e. 40, of the s. w. ¼, section 15, thistles grew. The ground was cultivated in corn and thistles pulled. On the farms of M. E. Walker and Mr. Leafe, at the west end of hedge separating these farms, ten thistles grew and received the same treatment.

On the farm of P. B. Williams thistles were plowed up and straw stacked on the ground, but thistles not killed. Other patches have been plowed and salted. No expense has been incurred by the town for destroying thistles this year; time spent, two days.

SECRETARY'S REPORT.

To the State Board of Agriculture:

In compliance with the by-law of the Board making it the duty of your Secretary to submit an "annual report of the workings of his office," I have the honor to make the following statement:

ILLINOIS AGRICULTURE.

The correspondence of the office for 1882 indicates that there has been marked improvement in the methods of farming in this State, and that there has never been more interest manifested in the improvement of farm animals.

The demand for drain tile has greatly exceeded the increased supply, and the large area of the most fertile land in the State thus made available for cultivation the past year, by drainage, will add much to our productive capacity.

The successful and profitable manufacture in large quantities of sugar from sorghum cane the past season, has increased the interest in this enterprise, and will doubtless induce capitalists to invest with more confidence in the development of what may prove a remunerative industry to the producer and lessen the cost of this article to the consumer.

The rapid and healthy growth of the dairy interests of this State is worthy of special mention. The statistics published the past year place this industry near the lead in value of animal product with the agricultural commodities of the State.

Other specialties are receiving increased attention each year, in which the farmers of this State make a favorable comparison with the most improved sections of other States in extent of yield and quality of product.

A more diversified character of the agriculture of the State is noticeable each succeeding year, and is unmistakable evidence of the increased intelligence of our farmers.

WORK OF THE OFFICE.

During the year there have been printed and distributed 48,000 copies of the various publications in connection with the work of the Department. In the aggregate these reports make eleven hundred and thirty printed pages. During the same period there have been forwarded by express, eight hundred and thirty-eight packages, and one hundred and one boxes of books have been shipped by freight.

There were awarded at the State Fair of 1882, sixty-nine silver medals and eighty-one diplomas. These have all been prepared and forwarded by express to the parties entitled to receive them.

The letter books show that nearly three thousand letters were mailed during the year.

There has been a marked increase over previous years in the work in connection with the State Fair and Fat Stock Show.

The reports of the Standing Committees on Museum, Library and Crop Statistics will give detailed information concerning that work which need not be referred to here.

COUNTY AGRICULTURAL BOARDS.

The following counties have no Agricultural Boards, viz: Alexander, Bond, Cook, Calhoun, Clinton, Grundy, Johnson, Monroe, Pulaski, Scott and Washington.

The counties of Hancock, McHenry, Marion, Saline, Stark and Union have each two Fair Associations, but have not yet completed the organization of County Agricultural Boards, as provided by law.

The following counties, having two or more societies, have organized County Agricultural Boards in compliance with law: DeKalb, Ford, Fulton, Jackson, JoDaviess, Livingston, Logan, Ogle, Rock Island, Vermilion and Whiteside—Jackson and Rock Island having organized during the year 1882.

There is much dissatisfaction with the members of the several Fair Associations concerning the provisions of the law in reference to the State appropriations to Associations holding Fairs.

Some of the most successful Fair organizations in the State are not receiving the appropriation owing to the failure of other Societies in the county to co-operate in the formation of County Agricultural Boards, as provided by law, while other prominent and more recently organized associations refuse to become a branch of a County Board simply for a portion of the State appropriation of $100.

There has never been and probably never will be a Fair Association organized simply to receive the State appropriation, for it is not likely that the citizens of any community will be induced to expend large sums of money in the construction of exhibition buildings, stalls, pens and improving grounds for the holding of Fairs for the sole purpose of obtaining less than one hundred dollars from the State Treasury.

Since and including the year 1870, the munificent sum of $2,306,190 has been offered in premiums by the patrons of agriculture in this State, to the enterprising people of the world as an incentive to exhibit at our Fairs the best results in the breeding of stock, the skill of the inventor and manufacturer of labor-saving farm machinery and implements, the growing of superior specimens of agricultural products, etc.

All the citizens of the State have shared in the benefits to agriculture resulting from the holding of nearly one thousand (942) Fairs in various portions of the State during the period named, and have never questioned the wisdom of paying the limited amount appropriated to County Agricultural Boards.

It will be seen from the following exhibit that the State appropriation to County Agricultural Boards the past five years ('77 to '81 inclusive) is but a fraction of the amount of premiums offered by the Fair Associations:

Year.	Premiums offered by Fair Associat'ns.	State appropriati'ns to Co. Ag'l Boards.	Per cent. State app'r. to premi'ms offered.
1877	$230,300	$7,100	3 08
1878	224,907	7,500	3 33
1879	241,083	7,800	3 23
1880	217,645	7,200	3 31
1881	209,802	7,000	3.33

It would increase the State appropriation but little to give annually $100 to each Fair Association in the State, holding Fairs and paying not less than three hundred dollars in premiums.

This small investment would be profitable to the State, and a change in the law giving the same appropriation to each society holding Fairs and reporting not less than $300 as paid in premiums would relieve this office of some unpleasant correspondence on account of the provision of existing law which excludes all but regularly organized Boards from participating in the State appropriation.

County Agricultural Boards composed of two or more branches, were organized in 1882, as provided by law:

Date organized.	County.	Branches.
Sept. 5, 1882	Jackson	Carbondale and Murphysboro
June 23, 1882	Rock Island	Port Byron and Hillsdale

The following new societies held Fairs in 1882, as noted below:

Date.	County.	Office.
	Hancock	Carthage
	LaSalle	Mendota

The Agricultural Society at Onarga having abandoned its organization, the Watseka Fair and Exposition Society, on the 5th of June last, complied with the law by changing its name to Iroquois County Agricultural Board.

The past season has been one of unusual prosperity with the Fair associations of the State. The reports received from societies to date, when compared with the returns of the previous year, show an increase of *eleven* per cent. in gross receipts, and an increase of nearly six per cent. in amount of premiums paid.

ILLINOIS FAIRS.

The following tables give much interesting data concerning the Fairs and Fat Stock Shows held in this State:

ILLINOIS FAIRS—1882.

The number of Fairs held in this State in 1882 exceed that of any former year; the number of entries at the Fairs the past year has not been equalled, except in 1877, 1878 and 1879; the amount of premiums offered and paid in 1882 is the largest on record, with the exception of 1875.

The following table gives the number of entries and premiums offered and paid during the past twelve years by the Fairs held in this State, as far as reported:

Year.	Number of Fairs report'd.	Number of entries.	Amount premiums offered.	Amount premiums paid.
1870	56	39,188	$108,145	$85,154
1871	49	51,373	117,381	92,126
1872	51	51,793	105,396	82,989
1873	70	63,105	151,324	112,360
1874	89	89,763	206,481	145,401
1875	87	98,879	268,476	192 903
1876	93	96,648	230,250	154,043
1877	94	113,925	230,300	168,237
1878	90	108,483	224,907	154,116
1879	93	120,634	241,083	175,900
1880	88	97,893	217,645	147,473
1881	82	90,585	209,802	140,862
1882	95	107,526	254,031	177,207
Total	1,037	10,329,795	$2,560,221	$1,829,071
Average	80	86,907	$196,940	$140,698

ENTRIES OF CATTLE.

The following table gives the per cent. of entries of the various breeds of cattle at all the Fairs held in the State the past six years:

Description of cattle.	1877.	1878.	1879.	1880.	1881.	1882.
Shorthorn, per cent	70	70	64	75	61	62
Hereford, " "	4	4	3	4	7	6
Devon, " "	6	6	5	3	3	4
Polled Angus, " "	......	......	......	......	......	1
Holstein, " "	4	5	5	2	5	5
Ayrshire, " "	2	4	4	2	4	2
Jersey, " "	14	11	19	14	20	20

It will be seen that there is a slight increase in the number of entries of Shorthorns, Devons, and a decrease in the number of entries of Herefords and Ayrshires, while the number of entries of Holsteins and Jerseys is about the same as in 1881. Over four-fifths of all the cattle exhibited at the Fairs in this State, the past year, were Shorthorns and Jerseys—the former making over 60 per cent. of all the cattle shown.

ENTRIES OF HORSES.

The following table gives the per cent. of the entries of the various breeds of horses at the Fairs of the State during the past six years, so far as reported. There was a slight decrease, the past year, in the number of entries of thoroughbred horses and Norman and French Draft, and a slight increase in the number of entries of Roadsters and Clydesdale horses. Over half of the horses exhibited at the Fairs the past year were of the roadster type:

Description of horses.	1877.	1878.	1879.	1880.	1881.	1882.
Thoroughbred, per cent	22	14	20	11	11	10
Roadster, per cent	48	53	44	58	57	59
Norman and French Draft, per cent	22	20	23	19	19	17
Clydesdale and English Draft, per cent	8	13	13	12	13	14

All the Fairs in the State, so far as reported, are included in the above table.

STATE FAIR.

The following table gives the amount of premiums offered by the managers of the Illinois State Fair since its organization, in 1853. It will be seen that the development has been healthy, and that each department has received encouragement in proportion to its importance to the other interests demanding the fostering care of the organization. The aggregate of the premiums offered are as follows:

Cattle	$70,406
Horses and Mules	81,825
Sheep	24,450
Swine	25,320
Poultry	8,214
Mechanics	12,511
Farm Products	16,856
Horticulture	26,190
Fine Arts	2,388
Textile Fabrics	11,810
Natural History	7,566
Equestrianism	1,291
Education	1,673
Speed	4,540
Miscellaneous	11,926
Total	$306,961

Amount of Premiums offered by the Illinois State Fair—1853-1882.

Place of Fair	Year	Cattle	Horses and mules	Sheep	Swine	Poultry	Mechanics	Farm products	Horticulture	Fine arts	Textile fabrics	Natur'l history	Equestrianism	Miscellaneous	Education	Total
Springfield	1853	$435	$185	$150	$105	$13	$130	$112	$154	.....	$121	.. ..	. ..	.. ...	.....	$1,405
Springfield	1854	... .	... .	... ...	... ..	... ...	....	... ...	....	....	..	.. ...	. . .	... ..	.. ..	4,229
Chicago	1855	....	.. ....	......	......	.... ..	.. ...	... ...	.. ..	......	..	.. .	... ..	... ...	.. ..	4,229
Alton	1856	1,150	1,018	160	140	53	595	350	82	.. ..	427	$180	.. ..	$75	... ...	4,230
Peoria	1857	3,040	2,255	330	210	151	845	379	180	. ..	316	175	.. ..	55	.. ...	7,936
Centralia	1858	2,084	2,005	845	200	62	325	164	628	.. ...	204	30	......	..	... ..	6,547
Freeport	1859	2,324	2,175	665	185	63	360	285	641	... ..	203	75	... ..	233	... ..	7,209
Jacksonville	1860	1,865	3,185	870	285	35	1,770	251	580	$130	238	386	.. ...	731	......	10,326
Chicago	1861	2,520	4,415	1,000	795	35	1,123	528	760	424	496	475	.. ...	671	.. ..	13,272
Peoria	1862	1,500	1,630	720	470	36	352	279	396	.. ..	148	240	.. ..	528	.. ...	6,099
Decatur	1863	1,205	1,290	720	400	36	580	454	350	..	148	120	....	378	..	5,681
Decatur	1864	1,385	2,145	830	405	36	55	618	381	. ...	410	300	.. ...	375	.. ...	6,940
Chicago	1865	1,460	2,264	1,005	410	36	105	634	651	... ...	461	150	.. ...	345	.. ..	7,524
Chicago	1866	1,460	2,320	1,145	410	38	1,070	720	692	.. ..	458	360	...	660	.... .	9,333
Quincy	1867	1.705	2,425	1,310	570	54	320	696	1,088	.. ...	464	305	$190	120	.. ...	9,237
Quincy	1868	2,010	2,765	890	570	54	261	637	1,140	75	485	305	330	80	... ..	9,602
Decatur	1869	2,023	3,110	920	695	64	340	812	1,045	75	475	305	330	60	. ...	10,254
Decatur	1870	2,320	3,345	1,025	1,400	185	515	867	1,104	95	515	305	.. ..	110	...	11,786
Duquoin	1871	2,820	3,355	785	1,460	255	395	717	993	80	519	305	.. ..	310	.. .	11,934
Ottawa	1872	3,100	3,535	775	1,400	255	585	725	997	105	531	295	144	280	.. ..	12,739
Peoria	1873	2,970	2,550	775	1,450	257	1,285	717	1,745	145	440	295	88	310	.... ..	3,027
Peoria	1874	3,655	3,845	1,065	1,740	502	185	[illegible]	1,790	181	413	300	88	200	. ..	11,734
Ottawa	1875	3,375	5,430	1,020	1,740	647	185	1,088	1,949	181	421	440	38	475	.. ..	11,039
Ottawa	1876	3,255	3,704	920	1,450	647	195	697	1,252	181	565	340	25	1,580	... ...	14,811
Freeport	1877	3,595	3,410	660	1,485	663	150	674	1,125	161	588	340	18	1,445	.. ...	14,814
Freeport	1878	3,525	3,940	775	1,420	784	150	684	1,239	96	480	400	.. ...	1,105	$300	14,898
Springfield	1879	3.495	4,001	1,290	1,485	812	180	711	1.289	96	557	235	Speed	1,500	305	15,856
Springfield	1880	3,570	4,001	1,290	1,475	817	180	726	1,374	91	565	235	$2,340	500	322	17,486
Peoria	1881	4,220	3,746	1,290	1,475	812	170	759	1,286	91	587	335	1,100	.. ...	330	16,201
Peoria	1882	4,340	3,776	1,320	1,550	812	105	802	1,276	176	575	335	1,100	....	416	16,583

PURE BRED STOCK.

The following table shows the number of entries, amount of premiums offered, and the amount of premiums paid to Pure Bred Stock exhibited at the fairs held in the State during the past four years.

Pure Bred Stock.	1879.			1880.			1881.			1882.		
	No. of entries ...	Amount of premiums offered	Amount of premiums paid......	No. of entries	Amount of premiums offered...	Amount of premiums paid.. .. .	No. of entries ...	Amount of premiums offered.	Amount of premiums paid.	No. of entries ...	Amount of premiums offered...	Amount of premiums paid. ......
CATTLE—												
Shorthorn	2,485	$12,675	$10,158	1,862	$10,159	$8,146	1,253	$9,071	$6,546	1,527	$10,432	$7,404
Hereford	123	1,941	806	102	1,783	671	147	2,395	678	146	3,314	680
Holstein	184	2,284	883	82	1,718	435	75	1,881	608	125	2,457	638
Devon	183	2,749	921	35	935	136	115	1,097	435	116	2,226	561
Ayrshire	176	1,816	676	48	776	165	77	1,417	322	48	1,688	196
Jersey	754	3,582	2,135	340	2,900	1,364	401	3,446	1,700	505	4,383	1,897
HORSES—												
Thoroughbred	900	4,929	2,818	293	3,097	1,403	305	3,428	1,571	355	3,850	1,761
Roadster	2,046	6,737	5,481	1,638	7,166	6,116	1,638	10,071	8,068	2,149	9,694	8,716
Norman and French Draft	1,099	3,965	2,587	537	2,531	1,457	543	2,796	1,588	598	3,605	2,105
Clydesdale and English Draft	602	2,571	1,947	328	2,071	1,277	363	1,681	1,112	516	3,217	1,695
SHEEP—												
Cotswold	582	1,132	1,023	259	696	567	384	1,020	712	357	1,151	838
Leicester and other long wool	873	1,805	1,507	602	1,385	1,060	596	1,416	1,055	751	1,948	1,372
Southdown	517	1,442	1,108	277	1,050	683	181	857	562	339	1,375	790
Oxford and other downs	165	486	424	177	420	262	250	652	483	113	464	179
American Merino	418	880	677	135	408	322	188	668	397	161	815	592
Spanish Merino and other fine wool	496	1,365	954	280	885	602	217	862	502	331	1,072	664
SWINE—												
Berkshire	1,399	4,410	3,425	776	2,615	1,836	586	2,758	1,563	636	2,996	1,754
Poland China	1,955	4,222	3,669	1,007	2,870	2,108	1,042	2,875	1,600	1,239	3,145	2,376
Chester White	588	2,674	1,743	279	1,718	709	261	1,600	766	266	1,825	869
Essex	136	881	573	52	456	103	51	688	229	68	710	305
Suffolk	71	516	231	41	267	137	25	411	123	30	389	79
Small Yorkshire	72	323	315	23	109	43	....	76	....	14	152	24

RECEIPTS AND EXPENSES.

The yearly receipts and expenditures, in connection with the management of the Illinois State Fair since its organization, in 1853, are given in the following table.

The economy on the part of the officers of the Fair for the past thirty years, as shown in the exhibit, is conclusive evidence of the ability and high character of the managers, who have cheerfully rendered the industrial classes of the State a most valuable service without other consideration than the satisfaction of having done well whatever they could to advance the general prosperity of the people of the State.

ILLINOIS STATE FAIR.

Place of Fair.	Year	Receipts, including balance.	° Expens's	Premiums	Expenses and premiums	Balance in treasury.	Deficit.
Springfield	1853	$4,751 20	$2,954 04	$944 45	$3,898 49	$852 71	....
Springfield	1854	6,344 85	1,751 76	3,146 79	4,901 55	1,443 30	....
Chicago	1855	14,128 83	9,019 11	2,472 00	11,491 11	2,637 69	....
Alton......	1856	11,675 64	5,704 73	2,650 00	8,354 73	3,320 91	....
Peoria	1857	19,198 82	6,542 85	8,104 54	14,647 39	4,551 43	....
Centralia....	1858	14,436 78	6,926 49	6,306 20	13,232 69	1,203 49	....
Freeport	1859	16,814 69	7,318 31	6,967 46	14,285 77	2,528 92	....
Jacksonville	1860	17,348 97	9,137 99	8,881 86	18,019 85	....	$670 88
Chicago	1861	14,824 56	9,969 99	4,286 50	14,256 49	568 07	. ...
Peoria.....	1862	4,836 07	4,870 30	**715 60	5,685 80	....	849 73
Decatur............	1863	15,251 70	8,356 59	4,862 00	13,218 59	2,033 11	....
Decatur............	1864	23,434 82	9,974 16	8,145 88	18,119 74	5,314 08	....
Chicago	1865	28,739 06	15,627 84	8,204 00	23,831 84	4,907 22	....
Chicago............	1866	21,820 41	11,247 39	7,209 55	18,456 94	3,363 47	... .
Quincy............	1867	32,974 82	13,298 51	10,608 14	23,906 65	8,068 17	....
Quincy...........	1868	24,096 92	12,542 42	7,649 50	20,191 92	3,905 00	....
Decatur	1869	27,407 70	11,356 95	9,227 79	20,584 74	6,822 96	....
Decatur...	1870	30,007 71	10,978 25	10,558 28	21,536 53	8,471 18	....
DuQuoin	1871	25,186 43	10,261 28	10,060 46	20,321 74	4,764 69	....
Ottawa............	1872	29,758 81	9,880 43	10,730 44	20,630 87	9,127 97	....
Peoria	1873	41,919 87	11,619 21	10,679 92	22,299 13	19,620 74	....
Peoria	1874	44,810 59	14,040 61	12,541 00	26,581 61	*18,228 98	....
Ottawa....	1875	26,800 18	12,300 36	13,612 47	25,912 83	887 35	....
Ottawa	1876	†24 913 55	13,099 10	5,977 42	19,076 52	5,839 03	....
Freeport...	1877	33,514 70	7,921 49	‡16,923 93	24,845 42	8,669 28	....
Freeport...........	1878	26,544 73	§8,803 71	12,841 34	21,645 05	4,899 68	....
Springfield	1879	31,656 91	§13,678 56	15,003 96	28,682 52	2,974 39	....
Springfield.......	1880	25,237 76	10,071 82	15,432 76	25,504 58	....	266 82
Peoria	1881	25,660 89	10,563 94	15,563 32	26,127 26	....	466 37
Peoria	1882	33,805 70	12,018 43	15,068 38	27,086 81	6,718 89	....

° Includes Winter Meeting expenses.
* $10,000 invested in U. S. bonds, $11,250
† Includes proceeds $10,000 U.S. bonds, $11,250
‡ Includes 50 per cent. premiums 1876, $5,518.
§ Includes $451.81 account Fat Stock Show.
‖ Includes $1,861.24 on account Fat Stock Show.
** No Fair. Premiums on field trial.

FAT STOCK SHOW.

The receipts of the last Fat Stock Show are the largest since the establishment of the exhibition, and for the first time in the history of the organization, the gate receipts, including donations, were sufficient to meet the expenses and premiums.

The following table gives the receipts and disbursements in connection with the management of the Fat Stock Show:

Place of Show.	Receipts.	Expenses.	Premiums	Expenses and premi'ms.	Balance.	Deficit.
Chicago, 1878	$5,075 87	$2,680 87	$2,395 00	$5,075 87	....	*$451 81
Chicago, 1879.............	9,332 22	5,110 59	4,221 73	9,332 32	....	*1,861 24
Chicago, 1880.............	6,496 57	4,045 81	2,450 76	6,496 57	....	*578 18
Chicago, 1881.....	7,052 75	3,747 78	3,323 00	7,070 78	....	*18 03
Chicago, 1882	9,706 90	4,678 34	4,354 00	9,037 31	$674 56	....

* Covered out of State Fair funds.

PERSONAL.

In concluding this, my eighth annual report, I beg to express to each member of the Board my high appreciation of the kind consideration extended toward me at all times, and for the wise counsel and ready assistance so often needed and so frequently and cheerfully afforded.

CONCLUSION.

I avail myself of this opportunity to again commend those connected with me in the office as having well and faithfully performed the duties assigned them.

Respectfully submitted,

S. D. FISHER, *Secretary.*

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TWELFTH REPORT

OF THE

STATE ENTOMOLOGIST

ON THE

NOXIOUS AND BENEFICIAL INSECTS

OF THE

STATE OF ILLINOIS.

FIRST ANNUAL REPORT OF S. A. FORBES,

FOR THE YEAR 1882.

SPRINGFIELD, ILL.:
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1883.

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LETTER OF TRANSMITTAL.

Illinois State Laboratory of Natural History,
Office of State Entomologist.

Normal, Illinois, December 30, 1883.

Hon. J. R. Scott, President of the State Board of Agriculture:

Dear Sir: I have the honor to present herewith my first report as State Entomologist of Illinois, the twelfth in number of the series from this office. Although the period covered by this report is ostensibly the entire year 1882, I deem it proper to say that it really relates only to the latter half of the year—my appointment to the office dating July 3. Although, as Director of the State Laboratory of Natural History, my attention had been more or less engaged for several years by questions relating to economic entomology, yet the nature of my duties was such as to forbid my following the subject closely until I was made responsible for the work. As a consequence of the brief period of time actually covered by this report, much of the matter contained in it is necessarily of a somewhat fragmentary character, since it has been impossible to follow any species of insect through more than half the year.

I am happy to say that insect injuries to the crops, both of the farm and of the garden, were this year considerably below the average. While the chinch-bug hibernated in extraordinary numbers, and threatened serious injury early in the season, the cool and wet weather occurring at the usual time of oviposition so far checked its development, that the damage done was finally trivial, and there is now a strong probability that we shall be practically unmolested by this most grievous pest during the coming year. Early in spring the army-worm appeared in overwhelming numbers in grass lands, in some parts of Southern Illinois, and a later brood occurred in June here and there in the central part of State,—but their parasites promptly reduced them to subjection, and no very serious injury was inflicted.

The season was, however, rather favorable to the development of plant lice, and several species of these always-threatening insects became locally destructive. The grain plant louse was heard of in oats fields; the corn plant louse was very widely and generally distributed in corn, and probably contributed appreciably to the short crop of the year; a grape louse awakened some alarm by a sudden attack on the vineyards in Northern Illinois; a plum aphis became a pest in nurseries of young plum trees; and a melon aphis very considerably diminished the yield of melons and cucumbers, even destroying many fields in the early spring and summer.

Although a wet season is generally regarded as injurious to most insects—especially if a low temperature conspires to retard multiplication, one of the worst pests of our cornfields, the corn root-worm, *Diabrotica longicornis*, Say, was evidently not unfavorably affected by the weather this year. Its injuries were fully as serious as ever before, and more widespread than they have before been known, notwithstanding the fact that the eggs in the ground and the newly-hatched worms were exposed to daily drenchings by cold rains until the first of July. It is not impossible, however, that a cool and wet fall would have an unfavorable effect on this worm, as it is at this time that the eggs are deposited.

A good deal of complaint of the work of the Hessian fly has reached the office, this fall, from Southern Illinois, and there can be little doubt that this insect is at present increasing in numbers in that region. The same may be said of the Angoumois grain moth, which works upon grain both in the stack and in store, and which must certainly be vigorously attacked, if we would insure ourselves against great and increasing loss. Among the common orchard pests I have seen no especial outbreak, except in the case of the cherry slug and the white tussock caterpillar, both of which were unusually abundant in the northern part of the State.

Among strawberry-growers, increasing anxiety is felt respecting the ravages of the crown-borer and the strawberry root-worm, and everything possible has been done which the brief time would permit, to complete the life histories of these insects and to work out methods of preventing and escaping their ravages.

More or less work has been done on all the insects above mentioned, as well as upon several others, and many of the results are presented in this report. A considerable number of observations and experiments are withheld, however, until the subjects to which they relate can be more thoroughly worked out.

The field work of the season has been prosecuted as actively as possible in all parts of the State. Early in July I visited the fields of corn, sorghum and broom corn, at Champaign, and went from thence up the Illinois Central to Chicago, stopping at frequent intervals for short trips through the country, and using every opportunity to collect information concerning injuries, and to inspect the growing crops personally. From thence I went to Waukegan, and along the line of the Chicago and Northwestern to Freeport, returning south by the Central to Normal again. In August I went to Stark county, for the special purpose of observing the work of the corn root-worm. In this month, an assistant, Mr. F. M. Webster, spent three weeks in making field observations and collections in DeKalb and adjoining counties, and later visited Mason county for the same purposes. In September, another assistant, Mr. W. H. Garman, went to extreme Southern Illinois, charged especially with the investigation of insects affecting the strawberry, but making notes also, on everything relating to economic entomology. He visited Villa Ridge, Anna, Cobden, Tamaroa and Centralia, spending some time at each of these places, and in October he made another trip to Carmi, and other points in the Wabash valley. In September, I went with an assistant to Jacksonville and Jerseyville, and in November brought the field work practically to a close by making a third trip southward to Villa Ridge, Anna, Carbondale and Centralia. Field work was constantly in progress in the vicinity of Normal, and numerous short trips were also made to points adjacent. It was the policy of the office to keep all parts of the State, as far as possible, under intelligent supervision, and especially to visit, either in person or by competent assistants, every point where anything of especial interest to the economic entomologist appeared, whether in the way of insect injuries not yet clearly understood, or destructive outbreaks of familiar enemies, which afforded opportunities for field experiments for the control of their injuries.

For the purpose of securing early notice of such events, and also with the hope of distributing practical information concerning injurious insects just where and when it was most needed, I early took measures to put the office in immediate communication with farmers and fruit growers throughout the State. With this end in view, I issued in July, through the usual channels of the department, and by every other method available, a circular inviting correspondence, not only from entomological observers, but also from those in want of information or advice respecting insects injurious to their property. I am happy to say that this circular, widely published by the press, had apparently an excellent effect. The correspondence of the office has rapidly grown, two hundred and eighteen letters having been written on economic entomology since the first of July, but it is not yet by any means as large as it should be; and I cherish the hope that those for whose benefit we are working will more generally form a habit of referring to us for needed information, and of contributing in turn to the common stock of knowledge from their own observation and experience.

The most important special investigations undertaken this season were those upon the corn root-worm, the chinch-bug, and the strawberry crown-borer, together with studies upon the food of the predaceous insects and upon certain questions related to the food of birds. Much time and thought was given to a research upon the contagious diseases of the chinch-bug, and some substantial progress was made in a knowledge of the subject. Many experiments were also made with insecticides, especially for the chinch-bug, the plant-lice, and the cabbage-worms. The life histories of the corn root-worm and of the strawberry crown-borer were completed, and several previously published mistakes of observation or inference were corrected. A large number of dissections of those insects which have hitherto been reckoned almost wholly carnivorous, and therefore highly beneficial, were made with a view to determining exactly their value to the farmer, and the conditions under which they could live in the absence of a supply of insect food. Substantially complete results were reached for the two most important families of beetles of this class—the lady-bugs (Coccinellidæ) and the predaceous ground beetles (Carabidæ), and the results have been published this month in Bulletin 6 of the State Laboratory of Natural History. The practical importance of these results as a part of the data of economic entomology has led me to publish an abstract of the above paper in this report.

In preparing my report for publication, I have borne in mind the fact that economic entomology is a science of great extent, and of unusual difficulty, and that it requires for its most successful cultivation the joint labors of a number of workers, each contributing his share to the common stock of knowledge. The main object of all our studies and experiments must be the improvement of agriculture and horticulture, as far as these depend on a knowledge and mastery of injurious insects, and they should undoubtedly finally result in plain and simple descriptions, by means of which the intelligent farmer and gardener can recognize their insect enemies and friends; and equally plain and clear directions for the protection of their crops from insect ravages. But many of the questions presenting themselves for solution, are too large and complicated to be fully solved by a single worker, in a single year, and he will best help them to a solution who will publish from time to time reports of progress, so full and careful that others can see just what has been accomplished, and just where additional investigation is next needed. It is on this account that I have gone, in some of the papers of this report, into what may seem tedious and unnecessary detail to those who look only for *immediate* practical results from everything done or attempted by the State Entomologist. My purpose, in these papers, has been either simply to advance a difficult subject another stage, or else, where final conclusions are announced on difficult or disputed points, to give the exact grounds of these conclusions, so that those interested may see upon just what proofs they rest. In this way, I believe that we may be sure that progress will be uninterrupted and secure.

The essential results of these more elaborate papers have been briefly summarized at intervals, and attention has been specially called to these summaries by foot-notes, for the benefit of those caring only for general conclusions.

Besides the papers prepared by myself for the report proper, I present herewith an appendix, containing contributions by others.

I am under obligations to Prof. T. J. Burrill, of the State Industrial University, for an article kindly placed at my disposal, on an insect injury to the Lombardy poplar, discovered by him.

One of the assistants in the Laboratory, Mr. W. H. Garman, having paid special attention for the past three years to the minute and little known, but often decidedly injurious, mites known as the gall mites, or Phytopti, I have asked him to prepare a paper, treating this group from the standpoint of the economic entomologist.

Another Laboratory assistant, Mr. F. M. Webster, has made, under my direction, a special study of the Angoumois grain-moth, and has at my request prepared a report upon this destructive insect and its parasites.

I wish in this place to acknowledge my general obligations to my above-named entomological assistants, Mr. Garman and Mr. Webster, to the first of whom I am particularly indebted for the accurate original figures published in this report; to the various correspondents of the office, especially to Dr. E. R. Boardman, of Elmira, Stark county, and Mr. D. S. Harris, of Cuba, Fulton county; to Prof. T. J. Burrill, of the State Industrial University at Champaign, for determinations of fungi found in the stomachs of beetles, and for much valuable assistance in the study of the plant parasites of the chinch-bug; and to the members and officers of the State Board of Agriculture, especially to the Secretary, Mr. S. D. Fisher, and the Assistant Secretary, Mr. C. S. Mills, who have let no opportunity escape them to further the work of the office in every way possible.

My thanks are also due to the Illinois Central Railroad, as represented by its traffic manager, Mr. J. F. Tucker, to whose intelligent liberality I owe trip passes, both for myself and assistants, to all points on his road, wherever and whenever we were called on the business of the office.

Respectfully submitted.

S. A. FORBES,

NORMAL, ILL., Dec. 30, 1882.

State Entomologist.

THE CORN ROOT-WORM.

(*Diabrotica longicornis*, Say.)

Order COLEOPTERA. Family CHRYSOMELIDÆ.

[A minute, slender, white grub, about two-fifths of an inch long, boring the roots of corn in the ground from June to August, transforming into a grass-green beetle which feeds upon the pollen and silk of the corn and upon the pollen of other plants.]

The earliest published mention of this insect as a species injurious to agriculture, is scarcely four years old, and yet it has become one of the most destructive insects of the corn crop in Illinois, second of late only to the chinch-bug in this respect, and scarcely second to that. Until recently it was known to entomologists as a common but harmless beetle, feeding in autumn on the flowers of the thistle, goldenrod and other plants of the family to which these belong (Compositæ); but none were acquainted with its life history, and none suspected it of any injury to agriculture. That it should have developed rapidly from this humble and insignificant condition into one of the worst pests to the staple crop of the State, is an alarming phenomenon, and one which will well repay the most careful investigation. Now that its work is becoming known, there are many indications that its mischief as a corn-root worm was noticed occasionally, but not understood, as much as ten or twelve years ago; but it seems incredible that it can have appeared at any previous time in anything like its present numbers, or have done anything like the harm which it now inflicts on agriculture, without attracting the general attention of farmers or coming to the knowledge of such entomologists as Walsh, Riley and LeBaron. It is most probable, therefore, that this is another addition to the already long list of insects which are naturally harmless, but which have been stimulated to excessive multiplication and tempted to the most serious ravages by the removal of some of the usual checks upon their increase. Just what the changes in the ordinary condition of its life have been, which have caused this destructive outbreak of the* corn-root worm, we can not tell positively at present, although I shall have something to say on this point on another page; but, fortunately, we are able to determine what must be done to reduce it to its former limits. The great importance of a full and widespread knowledge of this insect, both to the farmer and to the student of the general system of organic nature, will no doubt justify an elaborate treatment of it in this report; and I will therefore give an account of it as nearly complete as is now possible, presenting not only the conclusions reached, but also all the evidence on which they rest, so that the intelligent reader may judge of their soundness for himself.

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*For a summary of the contents of this article, see p. 30.

Although two papers on this insect have already been published in the ninth and tenth reports of this office, the information on which they were based was confessedly incomplete, and some of the theories there hesitatingly ventured have since proven incorrect; and it therefore seems best to treat the whole subject independently. I have thought it necessary to give with special fullness the particulars relating to the amount of the injury, the number of broods, and the mode of hibernation, since it is upon these points that previous reports have proven to be especially at fault.

EXTENT AND AMOUNT OF ITS INJURIES.

The first published mention which has come to my notice of the occurrence of this species as an injurious insect, is in the report of the Commissioner of Agriculture for 1878, on the 208th page of which Prof. C. V. Riley, entomologist to the department, remarks: "Mr. Gustavus Pauls, of Eureka, Mo., had his corn seriously damaged at the roots by the larva of a little beetle (*Diabrotica longicornis*, Say.,) that was not before known to have any such habits." Prof. Riley was, therefore, not only the first to note the injury, but also the first to determine the species to which it was due. Later, referring to this item in the American Entomologist for October, 1880, Mr. Riley says: "The injuries of this insect to corn roots have, for some time, been known to us. * * * We first received it in the larva and pupa states in August, 1874, from Mr. H. Weber, of Kirkwood, Mo., who found it burrowing in the roots of his corn, and doing considerable damage. While the general resemblance to the known larvæ of *Diabrotica vittata* (the Striped Cucumber-beetle) showed its relationship, and we suspected it to belong to *D. longicornis*, on account of the frequency with which this pretty, greenish species was found in corn-fields, yet we failed to get positive proof by breeding until August 14, 1878, when the first beetle was obtained from larvæ received the previous month from Mr. G. Pauls, of Eureka, Mo."

In the *Western Rural* for May, 1879, a correspondent in Warren county, Ill., says: "During the last few years our corn-fields in this section have been infested by a small white worm or larva, of which farmers generally know but little. Except in size, color and habits, it resembles the yellow wire-worm. Instead of disturbing the kernels of corn they attack the root, and as soon as corn is up, we find the roots dying, and the inside of them filled with these little pests. They enter the root at the base of the stalk, and burrow under the bark of the root until it is destroyed. They are at first very small, and can scarcely be detected with the natural eye, but later they appear to be one-half inch in length, with seemingly all appearances of the wire-worm in shape."

In a letter to Prof. French, written in July, 1880, and published in both the ninth and tenth reports of this office, Dr. E. L. Boardman, of Elmira, Stark county, Ill., describes the injury done by this worm to corn in his vicinity. The occurrence of the same pest in LaSalle county is shown by a communication from Marseilles, in the *Prairie Farmer* for September 7, 1880, the writer of which says: "We had as fine a stand as I ever saw, and we expected a good crop, but our corn seemed to stand still after about one foot high. I examined mine, as I had some trouble the past two years. The pest has been known here several years, damaging some fields as much as seven or eight years ago. The worm is white in the young state, about the size and looks of a cheese maggot."

Injuries to the corn in Stark county were reported by Dr. Boardman as scarcely less serious in 1881 than those described during the previous year. In August, 1882, I paid a visit to that county myself, for the purpose of examining the injuries done by the worms, and found them not at all inferior to those of former years. In several cases the owners of the fields estimated the probable loss at from twenty-five to seventy-five per cent. of the crop. In every case examined, the seriously affected fields were those which had been in corn for one or more years previously, and the degree of injury almost always corresponded closely to the number of successive years the ground had been in corn. A letter from Dr. Boardman, received in November, after the corn was chiefly harvested, estimated the loss in his vicinity due to the corn root-worm at from twenty to sixty per cent., with an average of thirty per cent.

During this same month of August, my assistant, Mr. F. M. Webster, went to DeKalb county, for the purpose of studying the corn root-worm and other insects, and found this species not less abundant and injurious than I had found it farther west. The presence of the white grub in many of the fields infested by the root-worm, made it difficult to estimate exactly the amount of the injury due to the latter. A careful comparison of some fields in which sometimes one and sometimes the other was at work, showed that the damage due to the white grub was, on an average, about one-fourth that done by the root-worm.

To show the condition of things found in this region the following abstracts of his notes are given: In one field, which had been in corn four or five years, fifty per cent. was destroyed. Another, planted to corn for three years previously, was badly damaged. In still another, which had been in corn but one year preceding, only a few of the beetles were found, and none of the worms. On Mr. Griswold's farm, one field had been in corn three years, and another but two, both having been otherwise treated alike. The crop was badly injured in the first, and but slightly so in the second. Where, of adjoining fields, separated not even by a fence, one had been previously planted to corn, and the other had been in some other crop the preceding year, the dividing line between the two was clearly indicated by the difference in the thriftiness of the corn. In a field of Mr. Taylor's which had been planted to corn for three years previously, about a fourth of the crop was destroyed.

The work of the worm at Sandwich, in the same county, is sufficiently indicated in the following letter from Mr. Jas. Griswold, who lives near that place: "All our land that had the third crop of corn on it was badly used up by the white grub and corn root-worm. We had two small fields, one of ten and the other of twelve acres, that we thought too strong for oats, which should have given us forty bushels per acre the present season. We got from the ten acre piece about twenty bushels per acre, and from the other about twenty-five. We had a piece of twenty acres of not quite as strong land, and not as badly damaged, from which we got about twenty-five bushels per acre. Our sod corn saved us; we had forty acres that gave us from sixty to sixty-five bushels per acre." The farmers near Waterman reported in November, that on husking their corn, the yield was much smaller than the stand of stalks would indicate, and that the hills pulled up easily and the roots had evidently been eaten by the worms. In the field of Mr. Lattin, at Shabbona Grove, the loss was from twenty-five to fifty per cent. of the crop, and other fields in this vicinity were reported nearly ruined, the worms being in almost every instance on old corn ground. In Little Rock, the damage to one field examined was estimated at twenty per cent.; in another, at least twenty-five per cent. was lost. The same insect had been noticed in the roots of corn at Millington, in Kendall county, in July, 1882.

A letter from Mr. H. W. Frazer, of Gibson, in Ford county, dated December 5, reported that the worms had done him a great deal of injury, as well as his neighbors, and that they were worse upon high ground and upon low ground that had been tiled. In McLean county, near Normal and Bloomington, several fields were seen, in which the yield was diminished from ten to fifty per cent., as shown by comparison with the yield of adjacent fields not affected by the root-worm. The insects were likewise abundant at Arrowsmith, in McLean county, and Pekin, in Tazewell county, although no notes of injury were received from those places.

A correspondent from Putnam county, writes under date of September 3: "I find here a small worm one-third of an inch long or less, that works lengthwise of the roots of the corn, and checks its growth so that it does not ear well," referring evidently to the species under consideration. In the vicinity of Mason City, in Mason county, many fields were examined in September, several of which were badly infested, being worse upon high ground than on low, and also, as reported, more destructive in dry seasons than in wet. In Mr. Warnock's field, near town, two-thirds of the corn was found destroyed, the stalks lying flat and dead with the half-formed ears rotting. This corn should have yielded seventy-five bushels per acre, but the ground had been planted to the same grain for several years successively. Mr. Warnock had noticed the worms for ten or twelve years previously, and remembers that serious damage was done as much as seven years ago.

Mr. D. S. Harris, an observer upon whose accuracy I have learned to rely, writes to me under date of January 8, 1883: "We have found this insect much more numerous than anticipated. We did not examine a single field of corn in which its presence was not more or less manifest. In some fields there would be large, rank-growing stalks of corn which did not ear out at all. These stalks, upon being examined, were found to have been injured by the larvæ of this beetle *after* the corn had bugun to tassel out. Other stalks would be found leaning over at the ground, and then growing erect. These stalks were found to have been injured by the larvæ *before* the corn had developed more than four or five joints. This was known by finding the roots eaten off and destroyed for about one-half their length, new roots having put out and furnished nourishment to the plant, after the larvæ had reached maturity." He further says that a small field planted about the first of July was entirely destroyed by the larvæ of this beetle before the corn reached maturity. Stock was turned into this field, and it was used as a feed lot during the entire winter. About the first of July, 1882, it was planted again to corn, and again almost entirely destroyed.

During a brief visit in September, to Jacksonville, in Morgan county, a few fields were examined near the city. In some which had been planted to corn for several years successively, about twenty per cent. of the hills were badly affected, and the yield was evidently greatly impaired. The worm was also found at work in the vicinity of Jerseyville, in a large proportion of the fields inspected, but was not doing very serious damage in any of them.

In extreme Southern Illinois, during a trip from Cairo to Vandalia, a careful search of the fields discovered none of the worms until Centralia was reached. Here a field of twenty acres, belonging to Mr. G. A. Brunton, had been previously almost entirely destroyed as a consequence of an injury, which, from his description, was probably that of the corn root-worm.

From the foregoing data, we must conclude that the pest is widely scattered through the corn-growing belt of Illinois, but is apparently more injurious at present north of the center, where the damage is sufficient to attract general attention, and to cause widespread alarm. It has doubtless been more or less prevalent for ten or twelve years, but has increased rapidly in numbers and destructive energy for the last four or five. Its scarcity southward affords no assurance of continuous exemption from serious harm.

Besides the occurrence of the pest in Missouri already noted, the following report of its devastations in Iowa will be of interest:

In September, 1882, the Walnut News, a paper published in Pottawattamie county, in Southwestern Iowa, said: "For some time complaints have been made that the corn was not earing as rapidly as it should, and that the cause of it was a small worm eating the roots. General attention was not attracted until this week; and then, in those localities where the storm of Monday night was felt, the universal prevalence of this pest became apparent. Acres of corn fell flat, and when examined it was found that the roots had been eaten to such an extent that it could not stand up under a wind. Corn on stubble ground is not molested in the least, as near as can be learned, but that which has been in corn the third year, or more, is assailed most, and mainly upon the tops of ridges or high dry ground. This is said to be one reason why the corn on the ridges is so slow in earing and growing, the worms having taken the main root. In such cases, where the corn is not blown down, new roots are forming, and the infested hills may mature, if the season is sufficiently late. We have, directly and indirectly, communicated with twenty.five or thirty different persons who agree with the above statement, and we have personally examined different fields; and while not able to find the worm spoken of in the succeeding paragraph taken from the Atlantic Telegraph, and reported by others, we found the roots of the down corn, and some of that yet standing, black and decayed, and bearing evidence of having been eaten off several weeks ago. The following from the Telegraph, dated at Anita, shows that the scare is not local: "Monday, Mr. R. C. Demming brought in several specimens of growing corn eaten off at the roots by a small worm, about half an inch long and not much thicker than a good-sized pin. He thinks he will have, judging from present appearances, some fifteen acres destroyed by this pest. We understand it is found on other farms also. The fields where they have worked here are damaged all the way from five to fifty per cent." The occurrence of this beetle in Southern Iowa in June of the present year, was also reported to me by Dr. Boardman.

DESCRIPTION.

A general description, sufficient to enable the ordinary reader to distinguish this beetle, will be found in the tenth report of this office, and in the summary at the close of this paper. A full technical description of the insect in all its stages is, however, yet a desideratum, and is herewith given.

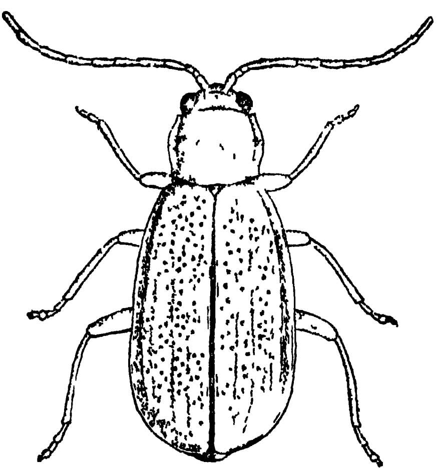

Fig. 1. *Diabrotica longicornis*, Say. Adult of the corn root-worm. Magnified 10 diameters.

Imago.—The adult beetle is about one-fifth of an inch in length by about half that in breadth, and a little the widest posteriorly. Its head is nearly as wide as the thorax, smooth, or nearly so, with a large circular depression between the eyes, from which a narrow groove leads forward, dividing between the antennæ and enclosing between the branches of the fork an elevated ridge, which extends downwards to the labrum. On either side of this, and in front of each antenna, the surface is minutely rugulose. There is also an angular depressed line just within each eye. The antennæ are rather long, extending backwards beyond the middle of the elytra. The second and third joints are short and equal, and together about as long as the fourth. The remaining joints of the antennæ are of nearly equal length. The first and second joints are nearly smooth, the remainder pubescent. The eyes are black, the head and first joint of the antennæ are pale brown, or green, or brownish-green, and the rest of the antennæ, the labrum and mouth parts, brown.

The thorax is not as wide as the elytra, and is strongly narrowed behind the middle, making the margin sinuate. The anterior angles are rounded, and the posterior obtuse. The sides of the thorax are narrowly expanded and recurved, leaving a gutter-like margin along the whole length. It is not margined behind. The disc is very slightly pubescent, and sparsely and faintly punctured, most distinctly posteriorly. A little behind the middle, upon each side of the median line, is a large conical fovea, but there is no median ridge or groove. A strong, erect hair occurs in front of the posterior angle, and another behind the anterior, and two or three short hairs follow the latter.

The elytra are coarsely and irregularly punctured, and sparingly pubescent, with short stiff hairs. The surface is diversified by four or five obscure and irregular ribs, of which the outermost is largest, and forms a well marked longitudinal angle. This and the one next it unite anteriorly in a prominent humerus. The edge of the elytron is recurved like that of the thorax, forming a still deeper gutter just within the margin. The thorax and elytra are commonly brownish-green or grassy-green throughout, but the humeral angles are occasionally touched with brown, as is likewise the smooth scutellum. The sutural line is also sometimes brown.

The epipleuræ are green, and do not attain the tips of the elytra. The legs and under surface of the body are pubescent except the prosternum, which is smooth, or nearly so. The abdomen is sparsely punctured. The thighs are usually green, but the tibiæ, the tarsi, and the sides of the metasternum are more or less deeply tinged with brown.

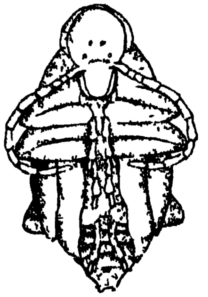

Fig. 2. Pupa of the corn root-worm, *Diabrotica longicornis*, Say. Magnified 10 diameters.

Pupa.—The characters of the newly formed pupa are well shown by the accompanying figure, but as some changes occur previous to the escape of the beetle, a description of the latest stage is given. The length is .18 of an inch, and the greatest width about one-tenth of an inch. The color is pure white throughout, with the exception of the brownish-red eyes, which now show through the skin, and a pair of brown, horny, curved hooks, attached to the tip of the abdomen, about equaling in length the preceding segment. The arrangement of the wings, wing covers, legs and antennæ, and the position of the head, are well shown in the cut. Two white erect hairs are seen between the antennæ, and another pair above and between the eyes.

Several scattered slender spines appear upon the back of the prothorax, as well as an irregular transverse row upon each of the other segments of the thorax and abdomen. These hairs are especially long and strong at the tip of the abdomen, and a few likewise appear upon the tibio-femoral joints. The hairs, as well as the forceps-like claws, already mentioned, at the tip of the body, doubtless serve to fix the pupa skin in the earth when the beetle emerges. The spiracles are distinctly visible as small brown rings upon the back of each of the first eight abdominal segments, but upon the three remaining segments posterior to these they are not apparent.

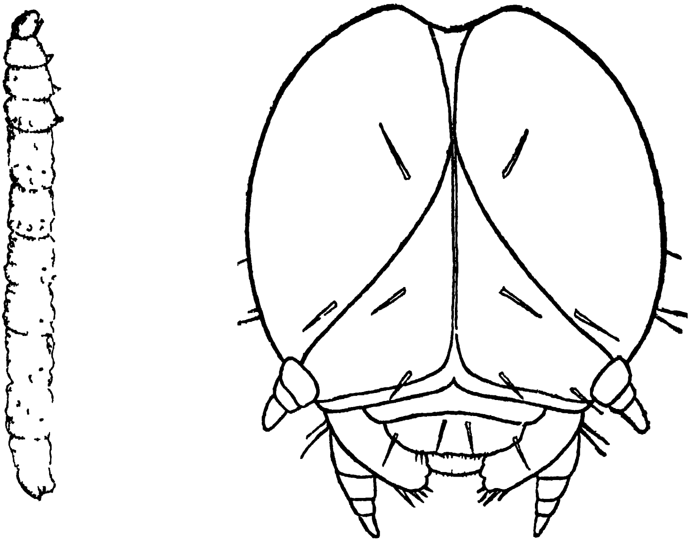

***Fig* 3.** Corn root-worm. Larva of *Diabrotica longicornis*, Say. Magnified 6 diameters Head more highly magnified. Front view.

Larva.—The corn root-worm, when fully grown, just previous to its last moult, is four-tenths of an inch in length, by one-tenth that width, white and smooth under a low power; but when more highly magnified, the skin is seen to be minutely roughened with very small tubercles. The body is cylindrical, narrowing a little anteriorly, the first segment being the shortest and narrowest of all. There are a few scattered stiff hairs to each segment, most numerous anteriorly, and especially upon the head. The latter is narrower than the first segment, convex but flattened above, about two-thirds as wide as long, and smooth except for the hairs already mentioned. It is yellowish-brown, a little darker in front and at the sides beneath. A narrow dark line extends along the middle of the head, widest posteriorly, where it is divided by the very narow white suture, which forks at the middle, sending two narrow straight branches to the anterior angles of the head.

Here the short, white, three-jointed antennæ are situated, the first joint about twice as wide as the last, and the second joint very short. The eyes are wanting. The mandibles are dark with black tips, and the other mouth appendages are white. The thoracic segments all bear short, two-jointed legs, each about as long as the segment to which it is attached. They are pale brown, armed with short, stout spines, and terminating in a single claw and a flattened, membranous, oval appendage, which extends some distance beyond the tip of the claw. The top of the first segment is coriaceous and yellowish-brown, while all the others are soft except the last, upon which is a circular brownish patch of leathery consistence. Beneath this segment is a prominent retractile wart or tubercle, serving as a false leg. The segment is entire and rounded posteriorly, where it is set with a few long hairs or slender spines.

Just before pupating, the larva becomes very much shortened and thickened, assuming more the form of a common grub. The abdominal segments now become much more distinctly marked, and the head takes a vertical position. The length in this, which may be called the semi-pupa stage, is only about one-fifth of an inch, and the greatest breadth .045 of an inch. The body now tapers more posteriorly than before, the last two segments being conspicuously narrower than the preceding. In other respects the larva remains unchanged.

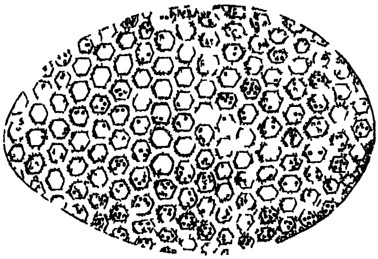

Fig. 4. Egg of *Diabrotica longicornis*, Say. Magnified 80 diameters.

Egg.—The egg is of a dirty white color and very minute, .025 of an inch in length, and .015 of an inch wide; narrower at one end than at the other, having in fact almost precisely the shape of a hen's egg. Under the microscope the surface is seen to be thickly dotted with minute hexagonal pits, (about twenty in its entire length,) and under a higher power the bottom of each of these pits exhibits still more minute depressions, seven or eight to each reticulation.

The only objects which I have noticed in the ground about the roots of corn, which are likely to be mistaken for the corn root-worm, are very young earth-worms, the larvæ or grubs of small gnats and other flies, and young wire-worms. A careful examination will readily distinguish the first two of these by the fact that they are entirely destitute of legs, while, as already remarked, the root-worm has three pairs of jointed legs just back of the head. In this respect it agrees with the young wire-worms, which are (also like the root-worm) destitute of appendages to the other segments of the body. Their crust is, however, firmer than that of the latter species, the head is longer, flatter and thinner; the body also usually somewhat flattened, and the last segment commonly either notched or variously toothed.

LIFE HISTORY.

Larva.—The time of the first appearance of the larva in the ground—the time, that is, when the eggs begin to hatch—is not yet exactly known, as the worms have not been seen until the effect of their work upon the corn has attracted attention to them.

A letter from Dr. Boardman (23d of October, 1882) says: "The earliest date on which I have found the larva is about the 10th of June; but I think they would have been found earlier had search been instituted. I did not look for them until I began to notice the change in the young corn." Several farmers who had suffered from the work of the worms, both in DeKalb and Mason counties, spoke of noticing spots in the field where the corn had ceased to grow while they were cultivating it; and as the plowing of the crop is nearly all done between the 10th of May and the 20th of July, the visible work of the worms probably begins in June. A correspondent of the Western Rural, writing from Warren county, says that he finds the roots dying with the worms inside them, as soon as the corn is up. At Millington, the larvæ were seen in the roots of the corn in July of the present year by Mr. Finney, of that place, and on the 26th of July, 1882, they were likewise seen again by Dr. Boardman. Mr. Bascom, of Sandwich, noticed them in the corn early in August of the same year. On the 18th of that month, I found them very abundant on Dr. Boardman's place, in Stark county, where nearly all remaining were fully grown. One was noticed, however, only .15 of an inch in length. They were continuously observed by Mr. F. M. Webster and myself in McLean and DeKalb counties throughout the remainder of August. By September, however, they had apparently all transformed, and I find no mention in our notes of their appearance again during the fall, although the roots of corn and all other suitable situations were thoroughly searched again and again until the middle of November.

There is consequently every reason to suppose that the eggs commence to hatch soon after the corn appears above the ground in spring, and that the larvæ begin at once to work upon the roots, but all get their growth and pupate before September, some certainly maintaining the larval condition until that date. Published mention of the occurrence of the larvæ in November in the roots of ragweed and other plants, has once or twice been made; but the fact that the slender grubs of Diptera commonly occur in such situations, and that these have already been several times mistaken for the corn root-worm, together with the fact that neither Dr. Boardman, Mr. Webster, nor myself have been able to find these worms later than September of this year, either in the cornfields or in wheat, or in the roots of any plant outside the fields, after the most careful, protracted, and oft repeated search under the most favorable circumstances, makes it likely that the reports above mentioned were incorrect. The extreme lateness and unusual warmth of the season this fall, would certainly have brought out the larvæ, if the eggs ever hatch at that time of the year.

The fact stated by Mr. D. S. Harris, in a letter to me, that one of his neighbors lost a field of corn by these worms, which was planted about the first of July, 1882, is the only evidence we have of the time to which the hatching of the eggs is continued. Mr. Harris is also very positive that he found these larvæ very abundant in the stems of the garden purslane (*Portulaca oleracea*), and a few of them also in the roots of ragweed (*Ambrosia artemisiæfolia*) and lamb's-quarter (*Chenopodium album*), weeds growing in an affected corn-field.

Pupa—The earliest date at which the pupa has been observed is one given by Dr. Boardman, namely, the 29th of June; but the adult beetle has been seen a little earlier, and the pupa doubtless sometimes forms by June 15. I have no record of the occurrence of the insect in this State during July; but it was again reported by Dr. Boardman on the 5th of August, and was found by me abundantly on the 18th of the same month. In DeKalb county pupæ were noticed by Mr. Webster on the 21st of August, and also on the 24th, and again upon the 26th, but were not found in any of the hills examined later than this date. The transformations, therefore, beginning in the middle of June are probably complete or nearly so by September 1. The length of time passed by one individual insect in the pupa state is not yet known.

Adult Beetle.—As this insect is more likely to be encountered in a mature condition than in any other of its stages, the dates of its appearance here given will afford a better idea of the period during which the brood develops, than those derived from collections made in the other stages. Dr. Boardman says: "I found the beetle in Southern Iowa, this year, as early as the 25th of June; but the earliest date on which I have found it in the latitude of Stark county, is from the 1st to the 10th of July. I think that the beetles commence to come out of the ground about the first half of July, and continue until the latter part of August." In another letter from Stark county he says: "I could not find any beetles here on the 28th or 29th of June, when I searched for them, nor for some days after that time; but I caught them one year ago on the 1st of July."

The first specimen obtained at Normal, this year, was collected from a roadside plant, on the 27th of July. No search for them had been made in the cornfields, however, and the fact that a few days later, namely, on the 1st of August, they were found very abundant in a field at Arrowsmith, in McLean county, makes it seem probable that they might have been collected earlier in this situation. These specimens were fresh from the pupa, as shown by their very light color. They were more numerous upon the corn, at this time, than upon the weeds in the field. On the 7th of August they were found abundant in cornfields at Pekin, chiefly gathered at the bases of the leaves where these join the stalk, and apparently feeding upon the pollen and anthers of the corn gathered there. On the 18th of August, at Elmira, I found them at the bases of the leaves, and likewise on the silks of the corn, which they were evidently eating freely at this time. The insect was now chiefly in the pupa state, only a few larvæ remaining; while the beetles were intermediate in number between the two other stages. On the 21st of August, in DeKalb county, larvæ, pupæ and imagos were still found; and in DeKalb and Kendall counties the beetles were seen pairing in the field, at various dates, from the 17th to the 25th. On the 26th, they were first noticed on the blossoms of thistles outside the field, but many still occurred in the cornfield, behind the sheaths of the corn and upon the silks. Their abundance in the last-named situation in the fields near Jacksonville, two days later, has already been noted. They were generally scattered through the field, but most of them were in the silk at the tip of the ear. On the 4th of September, at Normal, a few were still to be found in the tip of the ear, feeding partly upon the silk, but also upon the terminal kernels of the corn. At this time, however, most of them were scattered upon the flowers of ragweed and smartweed in the field. On the 11th, they were still noted feeding upon the silk and corn, and likewise upon the blossoms of Helianthus outside the fields. On the 16th of the same month they occurred, chiefly upon smartweed and ragweed, but a few were yet eating the silks of the greener ears; none were to be found about the bases of the stalks, and only two or three were seen behind the sheaths. They also occurred upon the thistles and golden rod outside the field, but had not yet abandoned the fields, to any considerable extent, in search of food. A few were still feeding upon the kernels of corn at the tips of the ears. On the 25th, Dr. Boardman, of Elmira, found the abdomens of the females distended with eggs. At this time, at Normal, they were seen occasionally copulating, and occurred about equally upon flowers of smartweed and ragweed and in the tips of the ears of corn. In one field where the corn had been attacked by blackbirds, which had torn open the husks and pecked and broken the skin of the kernels, the beetles were nearly all found in the ear, and scarcely any upon the weeds. This fact indicates that the insect is commonly prevented from eating the corn by its inability to break the epidermis after the grain has commenced to harden.

On the 27th, Dr. Boardman writes that in the mornings, when the air is cold, he finds the beetles hiding under the clods and in crevices in the ground.

On the 1st of October, a letter from Mr. Sidney Lattin, of Shabbona Grove, in DeKalb county, contained the following item: "I find, in gathering corn for feed, great numbers of the corn-beetle, and a load of snapped ears contains hundreds, if not thousands, of them."

On the 3d of October, they were noticed in the University grounds at Normal, probably feeding upon the blossoms of clover, with which the campus was covered.

On the 7th, a few were still found in the silk of soft, green nubbins of corn, and a few were obtained by sweeping dead ragweed and smartweed in the field; but the greenest clumps of smartweed were swarming with them.

On the 13th, in a weedy field of corn from which the stalks had been cut, but very few beetles indeed were found either about the weeds or upon the ground or under clods, an hour's search yielding only three specimens; but in an adjoining turnip-field they were quite numerous upon the leaves.

On the 14th of October, they were noted as evidently very much less numerous than before, in the fields of corn which had previously been alive with them.

On the 18th, I carefully searched the stalks and ground for hibernating beetles in one of the worst infested corn-fields, but found, in an hour's time, only three living beetles and two dead ones, the latter covered with mold. In sweeping the weeds, but two or three would be taken in the course of a minute. The beetles had now certainly nearly all left the field, and eggs were found in the abdomens of none of those obtained. In the clover adjacent to the corn the Diabrotica was abundant, sometimes four or five specimens occurring on a head; but none were found at the roots of the grass or under matted vegetation.

On the 14th of this month a careful search in a badly infested field gave only a single specimen, found alive in the ground, and another, dead, in the same situation.

On the 8th of November, dead females were seen in the ground, often at a considerable depth, and frequently surrounded by clusters of the eggs which had been previously determined as those of Diabrotica.

On the 9th, Dr. Boardman saw them flying quite actively at Elmira, and is confident that he has seen a few under rubbish as late as December in former years.

The above data may be briefly summarized as follows: The beetle makes its first appearance in the adult stage about the middle of June, and may then be found continuously in gradually increasing numbers through July, August and September, most abundantly at first upon the corn, where it feeds upon the pollen and silk at the tip of the ear (occasionally also upon the kernel). but afterwards deserting the cornstalks for the blossoms of the fresher weeds in the field. As these fail, through frost or over-ripeness, it takes to the latest roadside flowers and clover and the like, now rapidly diminishing in number, and in November almost wholly disappearing.

Numerous observations, made in all suitable situations, render it extremely improbable that any considerable number of hibernating individuals should have escaped our attention. While here and there a specimen may survive the winter, it is certain that, in years like the present, they perish, as a rule, in autumn.

For the purpose of determining more exactly the food resources open to the adult, careful dissections were made of numerous specimens taken from a great variety of plants at various dates throughout the season, and the contents of their stomachs and intestines were studied critically with a microscope. This was found especially necessary, since it is often extremely difficult to tell precisely what an insect is feeding upon; and many mistaken inferences have been based upon inaccurate observations of this sort. It has been inferred, for example, that the beetle was chiefly dependent upon the pollen and other floral organs of ragweed, and that clean cultivation in the field and by the roadside would greatly reduce their numbers. An examination of the following notes will show, however, that it is not limited to fresh or living vegetation, but may find an abundant food supply when all such sustenance is withdrawn, and that the measure recommended may well have an injurious effect, especially as far as clean culture is concerned, by compelling the beetles to leave the field before their eggs have been deposited. In this event we should be deprived of the only means of arresting their ravages which has hitherto been hit upon, as will be seen later when methods of remedy and prevention are discussed.

In two specimens taken from the blossoms of the thistle on the 20th of August, only the pollen of that plant was found. Two others from the corn-field, September 4, were crammed with the pollen of corn and fragments of the silk. Two taken on thistles on the 7th of September had eaten only the pollen of that species; and those taken upon ragweed and swartweed, September 9, contained nothing but the pollen of those plants.

As the season progressed, however, a remarkable change occurred in the character of the food, and in the condition of the beetles themselves. Four specimens were dissected from a large number obtained by sweeping the weeds in the corn-field on the 7th of November. At this time most of the beetles had left the corn, but a good deal of ragweed was still green, and they were chiefly gathered upon this. The contents of the stomachs of these four specimens consisted partly of vegetable tissues which could not be precisely determined, but made about four-tenths of their food, while pollen of swartweed amounted to twenty-five per cent. The remaining thirty-five per cent. consisted, however, of spores of fungi of the kinds ordinarily taken by lady-bugs (Coccinellidæ). Helminthosporium amounted to about ten per cent., Uredo spores to seventeen, and lichen (?) spores to seven, while traces of Cladosporium and Septoria likewise occurred. Even in a specimen taken from the tip of an ear of corn, about fifteen per cent. of the food was made up of these fungi, the remainder, of course, consisting of the corn itself.

The alimentary canals of all these beetles contained large numbers of minute parasites, belonging to the genus Gregarina, one of the Protozoans. As these had not been seen in any of the earlier specimens examined, they doubtless indicated the decline of the beetle, and foreshadowed its disappearance for the year.

In three specimens taken from clover blossoms on the 18th of this month. the pollen and fragments of the petals of clover made about sixty per cent. of the food, and the remainder consisted of spores of fungi, including Peronospora, Ustilago and Cladosporium. In these latter specimens the intestines were literally alive with parasites, a single beetle often containing hundreds of them.

From the above it is evident that this insect can find an abundance of food upon dead and decaying vegetation, as the fungi eaten by the specimens last examined were the common molds occurring upon such tissues; and all attempts to limit its life by depriving the beetle of food, will doubtless be unavailing.

It is in fact, even a more general feeder than the notes just given would indicate, as it has been seen feeding upon the cucumber vine, and also upon beans; while a letter from Mr. Lattin, of DeKalb county, reports that he has found it eating into apples in his orchard, apparently taking advantage of punctures in the skin made by other insects, but enlarging these openings so as seriously to damage the fruit. This same fact has likewise been reported to me from Grundy county, where the adult beetle is believed to eat its way into thin-skinned apples without the assistance of other insects.

Egg.—Until the present season, the eggs of this beetle had not been seen; neither was the time or place of oviposition known. One correspondent reported as early as the 25th of September that he had found them at the base of the leaf of the corn, between the sheath and the stalk; but these eggs were lost before any opportunity was had to compare them with known eggs of Diabrotica; and, as they were found in the midst of minute dipterous larvæ of various ages, (taken at the time for the corn root-worm) and as the genuine eggs of the beetle could not be found afterwards in that situation, notwithstanding a protracted search made in various situations by several observers, (although dipterous larvæ were abundant there) it will scarcely be wise to conclude that the beetle lays its eggs above ground until this observation has been verified.

Careful search for them was made at Normal at this same date in all situations in the corn-fields, but without success. None were found upon the stalks nor roots nor in the ground about them, nor yet anywhere in connection with the roots of ragweed and smartweed abundant in the field; and a similar search was repeated later with the same results. On the 18th of October, however, large numbers of small dirty-white eggs were found by my assistant, Mr. F. M. Webster, at Normal, in the ground not far from the bases of the hills, at depths varying from one to four or five inches, both where the corn was still standing and where the stalks had been cut for fodder. A critical comparison under the microscope of these eggs with those obtained by the dissection of a gravid female of Diabrotica, was sufficient to demonstrate their identity,— a conclusion confirmed by their number, situation, and all the circumstances of the find. On the 20th of the same month they were found independently in the same situation by Dr. Boardman, at Elmira, (as reported in his letter of the 23d) and frequent search at later periods showed them by hundreds in every field which had been infested by the beetle. In several cases, as already remarked, the exhausted female was found in the ground in the midst of clusters of eggs. From three or four to eight or ten were usually found together, not in actual contact with each other, but scattered through a space of about half an inch in diameter. Most of the eggs were within an inch of the surface, but in some instances the female had penetrated to a depth of about six inches. They were not contained in any cell or special cavity, but were scattered through the ground, entirely unprotected. A most careful examination, many times repeated, of the earth between the rows, and of the roots of all the weeds growing in the field, failed to discover so much as a single egg outside a space a few inches across, around each hill. A similar careful search of the roots of thistles, ragweed, and goldenrod outside the fields, upon the flowers of which the beetles were feeding in great numbers, failed likewise to discover the eggs; neither was there any evidence in the roots of these plants, either in the corn-fields or elsewhere, that they had been infested by the larvæ. In short, not the slightest indication was found that the beetle breeds anywhere except in fields of corn. It is very probable that a few develop in other situations; but the number seems to be so small as to defy discovery, except by accident. A remarkable exception to this statement, not invalidating, however, its general correctness, was reported to me from Stark county. A field of oats had lodged so badly as to be unfit for harvesting, and consequently grew up in the fall to a dense mat of young oats, about six inches high. This ground was plowed the following spring and planted to corn, with the surprising result that the crop was almost ruined by the corn root-worm. It is probable that the abundance of fresh and tender vegetation in this field at a time when food for the adult Diabrotica was becoming scarce in the corn-fields adjacent, served to attract here large numbers of the beetles before their eggs were all deposited; and that the ground thus became stocked with eggs in the fall.

From the bodies of the females collected on the 7th of September, eggs were obtained of nearly full size, as many as fifty in number to each individual. A few were found early in October which had not yet deposited all their eggs, and they were seen copulating as late as September 25. From the above and from the dates given for the first appearance of the beetles, we may conclude that oviposition commences probably in August or September, and continues into October, the bulk of the eggs apparently being laid about the middle or last of September.

Doubtless a few scattering individuals of the early part of the brood deposit them before these dates, but their number is probably too small to have any special significance. That the eggs remain in the ground throughout the winter, is a foregone conclusion, as is also the fact that they do not hatch in spring until after the corn has commenced to grow. If the larvæ emerged earlier, they would, of course, perish of starvation; and that the hatching is not postponed long after the appearance of the corn, is proven by the early date at which the effect of their work upon the root makes itself apparent to the farmer.

With all these data before us, we can now make general statements which will stand the test of farther investigation. In the first place, it is evident that the beetle hibernates, not in the pupa stage, as has heretofore been surmised, nor yet as an adult beetle, but chiefly or solely in the egg. It is also fairly certain that previous writers upon this subject have been mistaken in supposing that this species was two- or three-brooded. In order to exhibit more clearly the fact that only a single brood appears during the season, a tabular summary of all the dates at which the insect was observed in its different stages, is given herewith. From this it will be seen that, larvæ, pupæ and perfect beetles were all to be found at any time from the middle or latter part of June to the 1st of September, and that beetles occurred continuously throughout the remainder of the season, no eggs being seen until the middle of October. On the other hand, larvæ and pupæ did not occur later than September 1. As the first observations were made about a month after the appearance of the corn above ground, it is certain that there was not time for the development of an early brood:

June	10...	L	...	......	...	Aug.	21...	L	P	I	...	Oct	1	....	....	I	....
	25 ..	...	...	I	...		21 ...	L	P	..	....		3....	....	...	I	....
	28 ..	....	P	......	....		25....	..	...	I	.		7....	...	...	I	....
July	1 ..	.	...	I	.		26...	L	P	I	...		13....	...	...	I	....
	26 ..	L	...	I	....		28....	....	...	I	...		14. .	. ..	...	I	....
Aug.	1 ...	L		I	.. .	Sept.	1....	.	...	I	..		18....	.	...	I	E
	5 ..	....	P	......	...		11.	...	....	I	...		20....	....	....	I	E
	7 ..	...		I	...		16 ..	..	....	I		Nov.	9....	....	....		E
	17	L	P	...	....		25 . .		....	I	E	Dec.	—....		...	I	....
	18 ...	L	P	I	....		27....	....	....	I	..						

Explanation.—L, larvæ; P, pupæ; I, imagos or beetles; E, eggs.

An inspection of this table will show that a period of about two months is required to pass the entire brood through one of its transformations. Since the adult beetles appeared last year as early as June 25, while pupæ were seen in the ground as late as August 26, it is certain that changes from pupa to imago must have occurred throughout this whole period, and the same reasoning will apply to the change from larva to pupa, and likewise to the hatching of the egg; and since the first larvæ which survive cannot be hatched before the corn appears above ground,—*i. e.*, about May 15 to June 1,—it is probable that the eggs are not all hatched before the first of August.

INJURIES TO CORN.

The larvæ, after hatching, attack first the fibrous roots of the corn, probably commencing usually near their tips, and working towards the stalk. They penetrate the surface of the root, running irregularly beneath it, devouring the substance as they go, causing the death and decay of the root as fast as they proceed.

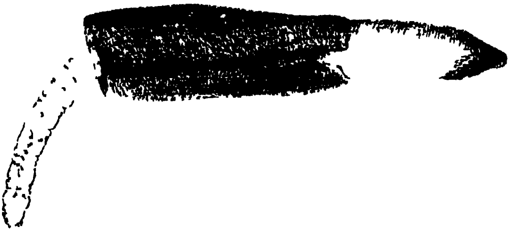

Fig 5. Corn root-worm, within the root. Enlarged The root has been broken in two, showing the larva still imbedded in it.

There are often as many as fifteen or twenty in a hill, and most of the roots of many stalks will be completely destroyed, a condition of things evident to the farmer as he plows a badly infested field, by the fact that no corn-roots are brought up on the plow. The difficulty is often apparent in patches here and there, but sometimes affects the entire field about equally. The growth of the corn is of course retarded, or even entirely arrested, and many stalks at the end of the season will be found from six inches to two feet in height. Others of the usual height will form no ear, and many will scarcely put forth a tassel. As the upper roots form, these are likewise invaded by the worms, and the hold of the corn upon the ground is so weakened that it is easily pulled up by hand or prostrated by an ordinary storm. Often this falling of the corn is the first evidence to the casual observer of any difficulty with the crop. If the mischief does not proceed as far as this, and the corn both tassels and silks, the ears often blight, either wholly or in part, and a field which may seem scarcely injured will yield an extraordinary percentage of small or worthless nubbins. This blight may be due, to some extent, to the fact that the beetle feeds upon the silk before the grains are fertilized by the pollen, but is probably chiefly to be attributed to the sapping of the vitality of the plant, owing to the destruction of its roots.

As an additional example of the final effect of these worms, a field in Stark country, near Elmira, may be cited. Of this, Dr. Boardman writes, November 9: "I find that the corn on badly infested lands has nothing on the stalk. I examined one field, four miles from my place, where the owner was husking, and should say that one-fourth of the corn was rotting, or beginning to rot. I found on cutting an ear open, that I could slice the cob as easily as if it were a turnip. The infested corn is yielding from ten to fifteen bushels per acre."

NATURAL REMEDIES.

The ordinary natural checks upon the undue multiplication of insects are birds, other insects, and the vicissitudes of the weather. Against birds this species is of course completely protected in all its stages, except that of perfect beetle; and although fragments of the latter would be very easily recognized in the food of a bird, I have never seen a trace of a single specimen in the thousand or more stomachs whose contents I have examined. Indeed, at the season of the year when these beetles breed, birds are not merely extremely scarce in corn-fields, but almost entirely absent, most of the insectiverous species being at this time attracted to other haunts by the ripening of the autumn fruits. It is, therefore, altogether unlikely that birds have any effect whatever to restrain the increase of the corn root-worm.

Unfortunately, we have as little evidence of any insect enemies of this pest. It is true that Prof. Riley remarks, in the article in the *American Entomologist*, already cited, that he has invariably found it in conjunction with a real wire-worm, which from its having been found preying upon locust eggs, he supposes to frequent the corn-roots for the food afforded by the Diabrotica larvæ. In all the collections of these larvæ, made from the Laboratory, however, only a single wire-worm was found, although everything occurring in the ground with the root-worm was preserved for examination. This wire-worm, upon dissection, was proved to contain only vegetable food, and but a mere trace of that. A number of other dissections were made of insects occurring in the same situation, for the purpose of determining whether any of them might possibly be feeding upon either the larvæ or the eggs.

Ten specimens of an abundant small beetle, *Agonoderus comma*, numbers of which were found, August 3, under the clods and in the ground about the roots of corn in a field which was suffering from a serious attack of the corn root-worm, proved to have taken both animal and vegetable food, but no traces of these larvæ were apparent. In fact, from the contents of their stomachs it was evidently impossible that they should have eaten any of the corn root-worms. Another specimen of this species, taken in a similar situation, but at a later date (August 20), gave similar results. Two minute predaceous beetles (*Tachys incurvus* and *Blechrus lineatus*) found on the 7th of November among the roots of corn where eggs of Diabrotica abounded, were likewise innocent of any attack on the pest. The stomach of the first contained a few minute fragments of an insect crust, and that of the second was empty. All the other carabid beetles captured at this time and place were found without food, having doubtless gone into winter quarters.

Thousand-legs (Myriapoda) were especially abundant here, more so in fact than any insect, but these, upon dissection, proved to have fed only upon fungi and decaying vegetation. It is possible that some of the eggs, and perhaps the larvæ also, may be destroyed by insects in spring when their appetites are more active, but of this we have as yet no proof whatever.

There is equally little indication of any seriously injurious effect exerted by rain or drouth. While it is true that the worm is said by many to be most destructive upon high land and in dry seasons, this seems to be due not to a greater number of worms in such situations, but to the fact that the corn defends itself less easily by throwing out new roots. Certainly the years during which this pest is reported to have been especially destructive include about all the varieties of weather known to our climate, some being extremely dry and some extremely wet, some with the winter warm and open, and others extraordinarily cold. In short, we have as yet no knowledge of any natural check upon the increase of this species except the necessary limit of its food supply.

If the inquiry be made, why, in the absence of conspicuous natural checks upon its multiplication it has not long ago increased beyond all bounds, and destroyed the entire corn crop of the country, the reply must be that there is a very effective artificial check upon this reproduction which has been unconsciously applied more or less generally, and that it is doubtless due to this that the pest has not increased more rapidly. The fact that the larva finds its food, as far as known, only in the corn-fields, and that eggs deposited elsewhere must all, or nearly all, fail of development, makes it necessary to the multiplication of this species that corn should be cultivated upon the same ground during successive years. Wherever rotation of crops has prevailed, consequently, it has met with serious checks; but on the other hand, where, for any reason, continuous cropping of corn has been the rule, it has so increased as to threaten to occupy the entire country. This is especially noticeable in Stark county, in a region where the farmers have nearly abandoned the cultivation of wheat on account of the ravages of the chinch bug. Evidently as a consequence of this, the corn root-worm has become there more numerous and destructive than in any other region known to me.

The future of this pest I believe to depend almost entirely upon the farmers themselves. If the continuous cultivation of corn on the same ground is persisted in, unless something of which we have now no hint occurs to arrest the progress of the insect, it is little likely to confine itself to those fields in which it is undisturbed. Multiplying at a rapid rate, it must eventually overstock such ground, and, following the habit of insects generally, when its numbers become excessive in any locality, it will probably migrate in swarms to other regions less thoroughly occupied. It flies readily and actively, and might easily in this way become an almost uncontrollable scourge.

ARTIFICIAL REMEDIES.

The inference from the foregoing to a frequent change of crops as a method of preventing the injuries of this insect, is too plain to require special comment. Not only our knowledge of the life history of the species, but also the experience of those suffering from its attacks, teach us that it will multiply indefinitely as long as ground infested by it continues to be cropped with corn, while a single season in grass or any small grain is sufficient to destroy those in the ground. No matter how thickly stocked with eggs the soil may be, we know of no reason to fear injury to any other crop than corn. Whether the other corn-like crops, such as sorghum and broom corn, are liable to its attacks, I am not at present able to say. If the larvæ were capable of living upon other generally cultivated cereals, the fact could not have failed to manifest itself long ago in badly infested regions. Much evidence of the efficacy of rotation has been given already, and only two or three instances need now be added. In a field planted to corn by Dr. Boardman, near Elmira, in Stark county, a part of the ground had been in corn for several years previously, while a part had been in rye the previous year. Of the first field some was heavily manured, the remainder not. These fields were not separated even by a fence, and yet when I visited them in August, it was easy to distinguish even at a considerable distance that part which had been in corn the year before from that which had been in small grain. Although the former in June was even more thrifty than the latter, in August its inferiority was evident to the most casual observer. The crop raised upon old corn ground, and not manured, yielded but fifteen bushels per acre, while that which was manured averaged about fifty bushels, and on the other hand that planted upon ground sowed to rye, and not manured at all, yielded seventy bushels per acre. All these fields were planted the same day, and treated precisely alike throughout the season. A similar condition of affairs was found upon the farm of Col. Jackson, in this same region, where three fields lying side by side, showed precisely similar differences, evidently dependent entirely upon the previous history of the land with respect to the kind of crop to which it had been devoted. In DeKalb county, evidence of the protection afforded by the rotation of crops, is afforded on a much larger scale. On a farm of 2,000 acres owned by Hon. Lewis Steward, near Plano, rotation of crops has been the regular rule; 1,600 acres of this land was planted to corn this year, and 700 acres were carefully examined by Mr. Webster. In August, only ten acres of this entire tract was found affected by the corn root-worm, and this was where, in the re-arrangement of the fields, a small tract of ground happened to have been planted to corn the previous year. All about Mr. Steward's place, on farms where rotation was not systematically practiced, the damage done was serious and general. With respect to other measures, the history of the insect gives us little hope of effective treatment. During its early stages as egg, larva and pupa, it is scattered and hidden in the ground beyond the reach of any agency except local applications to the soil, and to apply these throughout the field would be of course impracticable except on a very small scale, unless some fertilizer shall perchance be found, which while improving the land shall likewise injure or destroy the insect. Experiments with reference to this matter can easily be made at small expense, and will doubtless repay the trouble, but will probably teach us nothing but the hopelessness of attacking the pest in this way. The experience of farmers commonly shows the advantage of enriching the ground, as a palliative merely, by enabling the corn to react against the partial loss of its roots, but this does not at all diminish the number of worms, nor protect the field indeed against serious loss. Since the beetle feeds at first freely in the field, exposed upon the corn and weeds, it would of course be possible to poison it by the usual insecticides, especially Paris Green and London Purple, but this practice will doubtless be far more expensive than the method of rotation, and would be highly dangerous to stock. Clean cultivation in and outside the field. which has been previously recommended, would have but little, if any effect, since the beetle finds an abundance of food from the corn itself, and even in molds and decaying vegetable tissues, if deprived of all other sources of support. Finally, too much emphasis cannot be placed on the fact that an intelligent rotation of crops constitutes our only present safeguard against what now threatens to become a most destructive scourge unless met in this way.

SUMMARY.

The corn root-worm, in the form in which it affects the roots of corn, is a slender white grub, not thicker than a pin, from one-fourth to three-eighths of an inch in length, with a small brown head, and six very short legs. It commences its attack on the root in May or June, eating its way beneath the surface, and killing the root as fast as it proceeds. Late in July or early in August it transforms in the ground, near the base of the hill, changing into a white pupa, about .15 of an inch long and two-thirds that width, looking somewhat like an adult beetle, but with the wings and wing-covers rudimentary, and with the legs closely drawn up against the body. A few days later it emerges as a perfect insect, about one-fifth of an inch in length, varying in color from pale greenish-brown to bright grass-green, and usually without spots or markings of any kind. The beetle climbs up the stalk, living on fallen pollen and upon the silk at the top of the ear until the latter dries, when a few of the beetles creep down between the husks, and feed upon the corn itself, while the others resort for food to the pollen of such weeds in the field as are at that time in blossom. In September and October, the eggs are laid in the ground, upon or about the roots of the corn, and most of the beetles soon after disappear from the field. They may ordinarily be found upon the late blooming plants, feeding as usual upon the pollen of the flowers, and also to some extent upon molds and other fungi, and upon decaying vegetation. The insect hibernates in the egg, as a rule, and this does not hatch until after the ground has been plowed and planted to corn in the spring, probably in May and June. It occurs in destructive numbers throughout Illinois, from DeKalb to Morgan counties, and as far west as Iowa, and also less abundantly in Southern Illinois. It is at present most abundant and injurious north, where the chinch-bug has compelled a partial suspension of the culture of wheat.

Although the adult beetles, when numerous, do some harm by eating the silk before the kernels are fertilized by the pollen, and also destroy occasionally a few kernels in the tip of the ear, yet the principal injury is done by the larva in its attack upon the roots. The extent of this injury depends not only upon the number of the worms, but also upon the soil and weather and the general condition of the crop, being worst on high land and in dry weather, Under specially unfavorable circumstances, the loss due to the insect may amount to from one-fourth to one-half or even three-fourths of the crop, but when the conditions are generally favorable, it rarely amounts to more than ten or twenty per cent., and frequently even to less. Although the roots penetrated by the larvæ die and decay, thrifty corn will throw out new ones to replace those lost, and this is most likely to occur in moist, rich ground and in wet seasons. The damage is therefore greatest on high ground and in dry weather, and the use of manure will palliate, but not wholly obviate the injury.

No natural enemy of this insect has yet been discovered, nor is anything known to indicate that changes of the weather have any serious effect upon it.

As the results of numerous observations and comparisons, it is plain that little or no mischief is done except in fields that have been in corn during the year or two preceding, and a frequent change of crops is therefore a complete preventive. Beyond this the life history of the insect gives us little present hope of fighting it effectively, except at too great expense, as the eggs and worms are scattered and hidden in the ground, and the perfect beetle is widely dispersed throughout the field. Experiments will be instituted at the earliest possible day with a view to determining whether some fertilizer whose value to the crop will pay for its use may not have a destructive effect either upon the egg or the larva in the ground, but until such experiments are made and verified, intelligent rotation of crops must remain our sole effective resource against this most threatening and destructive insect.

STUDIES ON THE CHINCH-BUG*—I.

(*Blissus leucopterus*, Say.)

Order HEMIPTERA. Family LYGAEIDÆ.

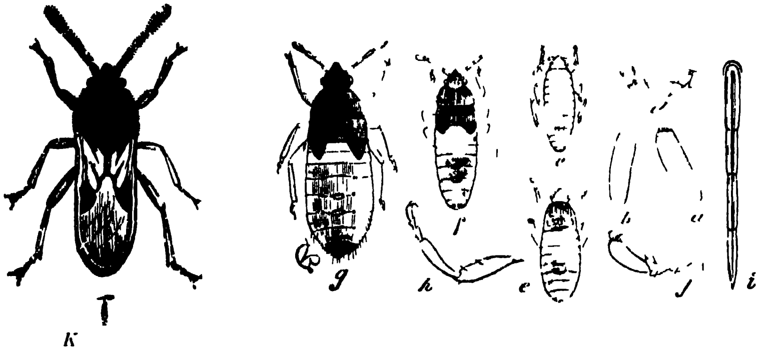

Fig 6. Chinch-bug (*Blissus leucopterus*, Say.) Adult and young. *a* and *b*, eggs; *c*, young larva, *d*, tarsus, of same, *e*, larva after first moult, *f*, larva after second moult; *g*, pupa; *h* leg of same; *i*, beak, *k*, adult. The line below shows the natural size.

It requires neither figures nor rhetoric to enforce the importance to agriculture of this especially destructive and unmanageable pest of the grain fields. The fact that it is the most dangerous insect foe with which they have to deal—that it taxes them more heavily than all other such enemies combined, is burnt into the conviction of thousands of farmers by repeated heavy losses and bitter disappointment.

Not the least serious feature of the situation is, the apparently uncontrollable character of its injuries. Notwithstanding the intelligent thought and energy which have been concentrated for more than a generation on this insect, it has continued to thrive—as little affected by any action which human ingenuity has brought to bear upon it as is the course of the weather or the orbit of the earth. Its coming and its going, its abundance and its scarcity, seem regulated by causes, thus far, beyond our reach.

It may be that the control of this pest is an impossibility, but as long as there remains a "fighting chance" to the contrary, it will constitute a standing challenge to the intelligence and enterprise of the country, and one which the economic entomologist must be the first to take up and the last to lay down. Until the entire subject of the life history, the relations, the economy, the development, and the conditions of health and disease, have been mastered, and without practical results—until they are, in fact, as well known as those of the horse, or the dog, we need not despair of measures of relief against it. In short, the importance and difficulty of the subject are such as to call for the most *patient, thorough* and *exhaustive research*, before we abandon the contest as hopeless.

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* **Summary statements of the results of these studies will be found on pp 38, 56 and 63.**

It was in the spirit of these reflections, that I made a beginning upon the study of this insect, last July, and the first results of the season's work upon it are here reported. As the chinch-bug has been somewhat fully treated by my predecessors, in previous reports from this office, I have not thought it worth while to summarize the well-known facts respecting it, but will pass at once, without further explanation or apology, to an account, first, of its history during the present season; second, of various checks upon its increase some of them newly-discovered; and third, of certain artificial measures for its destruction, upon which I have begun to experiment.

LIFE HISTORY.

The life histories of insects are the foundations of economic entomology; these must be complete, definite and accurate, or all else is indefinite and uncertain. And as the histories of insects vary, according to latitude, and from year to year, it is necessary that they should be studied in various localities, and under different conditions. Without the knowledge thus acquired, we can neither correctly foresee the course of events respecting insect ravages, nor tell when and where we may attack their authors to the best advantage,—and yet, for various reasons, there is scarcely a single species of injurious insect whose life history is certainly and completely known. For lack of this definite and reliable knowledge, we are often left to grope in a fog, where we should see by the clearest light of day. The requirements of this subject are exceedingly simple. The secret of a successful method is, close and *continuous* observation. A species should be followed from week to week, and at times even from day to day, throughout the year, and through its periods of scarcity as well as through those of its greatest abundance. The area supervised should be the largest which it is possible to cover thoroughly, and the time over which our observations are extended should be long enough to give us a knowledge of the variations from the average, due to differences of weather and other local or general conditions.

Respecting the chinch-bug, a fairly complete life history, for an average year during its periods of abundance, has been made out, and some general knowledge has been gained of the bad effects of extremely wet weather; but beyond this we have not heretofore gone.

As the year just closing has been in many respects an exceptional one, I have thought it worth while to give a somewhat full summary of our field notes on this insect, and we shall see that the peculiarities of the season, the extremely wet spring and early summer, followed by average weather, has had the effect not only to modify the development of the chinch-bug, but to change considerably the time, character and importance of its attacks on the crops.

During the first half of the year, I was not responsible for work on the economic entomology of the State, and was altogether too much occupied with other duties to make it possible to study the life histories of injurious insects personally with any careful attention; but I instructed my entomological assistant, Mr. F. M. Webster, to watch closely for the appearance of the chinch-bug, and to follow it throughout the year. He reported at frequent intervals the occurrence of the adult in considerable numbers in the usual situations up to July 1, but was unable to find anywhere any traces of eggs or young, nor could he learn of their appearance from farmers, or of any injury caused by them to wheat or other small grains in the vicinity of Normal. The first young specimens were in fact found early in July, in corn-fields not far from town. Thinking it possible that the extraordinary and long-continued wet weather of the first part of the season had prevented either the deposition or the hatching of the eggs, and consequently the appearance of the usual first brood, I wrote to several correspondents, stating the supposition which I entertained, and making the following inquiries: Did you see any *young* chinch-bugs previous to July 1 or thereabouts? Did you search for them, or would you have been likely to see them if they had occurred in your vicinity? I received replies only from Prof. Burrill, of the Industrial University at Champaign, from Dr. E. R. Boardman, of Elmira, Stark county, and from D. S. Harris, of Cuba, Fulton county.

Prof. Burrill's reply was as follows: "No; the bugs of July 12 wintered over in the adult state. I think, however, this is altogether exceptional, and grew out of the fact that they could not deposit their eggs, if, indeed, produce them, on account of the wet and cold. At any rate, I am positive that no early brood came out in our section of the State."

Dr. Boardman says: "Yours of the 4th received. In reply, I would say that I had carefully searched for the chinch-bug from early spring until the time of our field meeting, in June, and failed to find a single young chinch-bug. I found a few old ones, but not nearly as many as I found one year ago. On the 17th of June, at Burlington, Iowa, I saw the old bugs in very large numbers for the first time this season. They were flying in immense swarms eastward, and on my return home I learned that their flight was noticed here on the 19th, when they alighted in the corn-fields, and in some fields literally covered the corn, but did not remain more than twenty-four hours in such numbers. In my trip through Iowa, I carefully searched where I thought I would be most likely to find the young, but found none. I saw a few old ones, but not in any quantity; their flight had been observed as far west as Creston, which was as far as I went in that direction. The first young bugs that I found in this locality were collected about the 10th of July. I think I am as favorably situated for finding them as any one in this locality, as my land is rolling, and I cultivate wheat every year. The damage done by them here this year was very trifling, and I think I have not seen as few of them for the last five years as we had this year; yet we have enough saved for seed. I do not believe there was any early brood this year here."

On the other hand, Mr. Harris writes: "In reply to your inquiry of the 4th inst., relating to the chinch-bug, I would say: the young chinch-bugs were very abundant prior to the 28th of June, 1882. At this date both the adult and the young were *very* abundant in both the rye and the winter wheat. But on the eve of the 28th, we had the heaviest rain ever known in this section (6¼ inches of rain fell in less than two hours), and it destroyed both adults and young completely, as far as I had opportunity of observing; but did not destroy the eggs already deposited in great numbers. I did not succeed in determining the date of hatching; but on July 8 the young bugs could be gathered by the handful in several of the wheatfields about Cuba. A large part of the brood was destroyed by a rain about the 15th of July." That the young chinch-bugs, if present, should have entirely escaped the close and continuous watch of three as careful observers as Prof. Burrill, Mr. Webster and Dr. Boardman seems to me incredible, yet in all three of the localities in which they made their search the species was abundant the preceding year, especially so at Champaign and at Normal. Near the former place it did considerable damage to broom-corn and sorghum, and near the latter wheat fields were seriously attacked. As I have no reason whatever to doubt the exactness of the observations upon which the statements of Mr. Harris were based, I can only conclude that the chinch-bug failed to develop an early brood in some localities, but not in others. Mention was made in all the letters cited of the flight of bugs in midsummer, and a similar flight was noticed about the middle of June, south of Bloomington, in McLean county. The superintendent of the county poor farm there reported that the air was full of flying chinch-bugs at that time, and spoke especially of seeing a horse and rider literally covered with them. In a visit to Adams county in August, my assistant, Mr. A. B. Seymour, learned that chinch-bugs had been very numerous there in early spring, but were believed to have been killed by the rain.

My own first observations on the chinch-bug were made on the 12th of July, at Champaign, where I visited a large field of broom-corn belonging to Messrs. Bogardus and Johnson. These gentlemen reported that ten days previously, old bugs were abundant in the field and were beginning to pair, but that only a few young were then to be seen. At the time of my visit, nearly all the adults had disappeared, but some of those remaining were seen *in copulo*. The young were quite abundant, however, chiefly secreted between the sheath and stalks at the base of the broom-corn, but also frequently occurring outside. They were equally abundant on crab grass (*Panicum sanguinale*) which was the most abundant weed in the field. The common fox-tail grass (*Setaria*) was entirely wanting here, having all been destroyed by these insects during the preceding year. The growth of the broom-corn had been seriously checked by the bugs, but the recent weather had been favorable and the crop seemed now reviving. A small field of sorghum near by had been almost completely ruined by them, and other fields were threatened. They were also generally distributed through the corn, in the same stage as that above described, but in smaller numbers. I could hear of no appreciable injury done by them to small grain in this vicinity. As swarms of adults were noticed in the air at Champaign about July 1, it is probable that the fields near there were infested by these flying hordes.

From the 12th to the 20th of July, I visited many fields at Paxton, at Gilman, at Kankakee, at Ashkum, and near Waukegan. I found the chinch-bug in nearly every field of corn, in substantially the same condition as at Champaign, much commoner in some fields than in others, and evidently distributed without any reference to the proximity of fields of other grain. Their number rapidly diminished northward, until, at Waukegan, I found only two or three in half an hour's search. A careful comparison was made at Champaign, and also at Normal, of fields which had been in corn the year preceding and those now in corn following some other crop, but no conclusive evidence was discovered of any greater abundance of chinch-bugs in the one class of fields than in the other.* On the 15th of July several fields were examined in McLean county. Moderate numbers of adults were found in the corn, but many more of the young, most of the latter having just passed the first moult. None were seen in the intermediate stages, and only a few eggs were found. The adults were consequently of the preceding brood. Sorghum fields in the vicinity were not infested, as far as noticed. On the 17th the old bugs were few in number in the fields examined, and nearly all were young, in stages previous to the pupa.

Their occurrence in Piatt county, on the 22d of July, is recorded by a writer in the Farmer's Review of that date. On the 2[illegible]th of that month, Mr. F. S. Earle wrote me from Cobden, Illinois: "For the past two or three weeks it has been pretty dry, and I have heard a great many complaints of chinch-bugs in the corn; but we had a good rain last night that I hope will check their work."

Hon. Wm. McAdams, of Otterville, in Jersey county, writes July 30th: "The chinch-bugs promised some time ago to injure badly our corn, especially in fields adjacent to the wheat-fields. Myriads of them covered the rows, or several rows of corn next the wheat. Patches of this corn were badly affected, turned yellow and ceased to grow thrifty. The weather was very dry. But for some reason which I am at a loss to explain, the chinch-bugs thrived but poorly and at this writing have almost ceased to do much damage."

On the 7th of August, my assistant, Mr. A. B. Seymour, found them injuring a field of broom corn in Adams county, about two acres of which they had destroyed. In DeKalb county, on the 21st of August, the bugs were noticed in the corn in small numbers, and were said to be very abundant in some places. On the 8th of this month, I visited the field of Bogardus and Johnson, at Champaign, previously referred to, and found the chinch-bugs about as abundant there as on my former visit. They had not seriously affected the crop, however, as far as I could see, as the weather in the interval had been extremely favorable. About four-fifths of the individuals were at this time in the pupa stage, and a very few adults were seen, evidently of the same brood. On the 16th of August, in most of the fields examined, about ninety per cent. were pupæ, and many were winged. At Jacksonville, on the 29th, chinch-bugs (mostly adult) were found in all the fields, usually, however, in trivial numbers, collected largely in the silks at the tip of the ear, but also occurring on the stalks. A few were noticed in the third and fourth stages, but none younger than these. But in one corn-field visited here, the bugs were swarming on all parts of the stalks, ears, and leaves. Scores were collected in the silk at the tip of every ear. Seventy-five per cent. of those found in this field were adults. Numerous dead ones were seen upon the leaves and stalks and also in the silk, embedded in a white fungus, which frequently entirely covered the specimen. On the 30th, at Jerseyville, in Jersey county, a few occurred on the corn, of all sizes, from the adult *down to those just hatched.* These young were unquestionably the descendants of the adults found with them, and consequently represented a later brood than that hitherto discussed. Large numbers of fresh pupa skins were seen, and many of the adults had but just moulted. A few dead specimens appeared, and a few of these had been attacked by the same fungus as that noticed at Jacksonville.

On the 4th of September, at Normal, nearly all were adults, and occurred chiefly in the ears, both in the silk at the tip and behind the husks. At Mason City, on the 6th of September, they were numerous, but not abundant, upon the stalks of the corn and also in smaller numbers in the silks. On the 15th of this month, adults were noticed flying in small numbers at Normal. On the 16th, those remaining in Mr. Conner's field were all winged, occurring behind the sheaths and in the tips of the ears. Very few were present here however. They seemed to have generally abandoned this field as fast as they acquired wings. During a trip to Southern Illinois, they were found sparingly from September 9th to 25th, at numerous points, from Villa Ridge to Vandalia. Nearly all were adults, the remainder being in the preceding stage. Those noticed were between the leaves and the stalk, and in the husks of the ear. A few were likewise seen at Carmi, on the first of October, all adults. On the 25th of September, at Normal, they were scarce in all the fields examined, chiefly nestled among the husks, sluggish and apparently not feeding. On the 3d of October, numbers were found upon the wing, and they were also abundant in the University ground, upon grass and weeds. They were now rather rare in the corn-fields, having evidently scattered in search of winter quarters. On the 17th, a very few adults were seen behind the sheaths of corn, but none could be found elsewhere, not even about weeds or under rubbish.

On the 7th of November a careful search was made in corn that had previously been badly infested by them, but none were to be seen upon the stalks or under the rubbish on the ground in the field; in the thickly-matted grass adjacent only a single specimen was discovered by fifteen minutes' search. On the 14th of this month the weather was cold and raw, and the ground was frozen about the hills of corn from an inch to an inch and a half in depth; a very few bugs were now found in the crevices of the ground, among the roots near the surface. At Champaign, on the 1 th, I visited again the field of Bogardus and Johnson, making a careful search for hibernating individuals about the stalks, under the weeds in the field, and beneath the rubbish collected about the hedge rows; not a single specimen was found in these situations, although every temptation was afforded to hibernating insects, and many other species occurred abundantly. To what resorts the swarms which had developed in these situations had betaken themselves to pass the winter, I am not able to say.

From the foregoing data we may construct a fairly full summary of the history of the chinch-bug for the year.

Although the season opened early, a period of cool and extremely wet weather set in about May 1, throughout Northern and Central Illinois, and lasted until July. During all this time, although the old bugs were present in numbers sufficient to threaten serious injury to all field crops, the usual early brood was either suppressed here, or destroyed as fast as it appeared, except, possibly, in here and there a more favorable locality, especially to the southward. In Southern Illinois an early brood seems, however, to have appeared. From the middle to the last of June, swarms of flying adults were seen throughout Southern Iowa and Central Illinois,—whether of the hibernating brood of the preceding year, or adults of an early spring brood which had developed at a distance, where the weather was less destructive. it is impossible to say positively. Their general appearance at about the same time in places so far apart, and the fact that adults had been continuously present throughout the season, while no young had been seen, makes it seem very probable that those individuals on the wing were those which had survived the winter; that the unfavorable weather had prevented the deposition of the eggs, or had, perhaps even hindered their development in the ovaries of the females, and that the bugs were finally driven to migrate in swarms, in search of more suitable breeding grounds.

The weather changed about July 1, and from that time forward was unusually pleasant throughout the summer. The small grain was now so far advanced as to afford no suitable food for the bugs, and these flying swarms consequently settled and laid their eggs in maize, broom corn and sorghum—of course scattering everywhere throughout the field. For this reason, although the number occurring in several fields was sufficient to do great and conspicuous mischief if they had entered the corn in masses from without, as is their more ordinary practice, the same number uniformly scattered attracted little attention and did relatively little harm. By the middle of July most of these eggs were hatched, and the adults of this brood were gone by about July 20. Mature specimens of the following brood began to appear a few days later, the first noted being August 8. (It is very likely that adults of one brood will be found to overlap those of the next, in small number, so that no distinct division into broods can be detected, if these only are attended to.) By the last of August more than half the brood had completed their development, and at this time a few *young of a following brood* were seen at Jerseyville. This seems to have been a local phenomenon, however, as nothing of the kind was noticed later, in a long trip through Southern Illinois.

After the middle of September no immature individuals were seen, and from this time until the middle of October flights of adults again occurred, the corn fields being now generally abandoned. The developmental period was consequently about two months, reckoning from the time when the last eggs were laid until the transformation of the last of the brood was complete. Concerning their hibernation, no new facts were elicited, except that they could not be found in or about the fields where they had hatched.

That the almost complete destruction or suppression of the spring brood was due to the prolonged and violent rains, there can be no reasonable doubt. The exact method in which rainy weather affects the bugs is, however, as yet undecided. That it cannot be simple submergence that destroys them is shown by a fact reported to me by Hon. Wm. McAdams. In his vicinity, in Jersey county, they were extremely abundant in the grain early in the spring, but were all apparently swept out of the country by a long and violent storm. Some days afterwards, when the water had subsided, he noticed in pulling over the drift wood in the river bottoms immense numbers of chinch-bugs among the rubbish, most of them still alive and crawling about. On the other hand, it seems unlikely that simple exposure to moisture has the effect attributed to rain. An experiment made at the laboratory bears upon this question, and will be worth reporting, although circumstances prevented its satisfactory completion. A number of hills infested by the bugs were successfully transplanted to boxes and variously treated with water for ten days. Some selected examples were thoroughly drenched every day, both ground and stalks; in other boxes only the ground was watered; in still others the corn was sprinkled every day, but the ground protected; and the remainder were left with only sufficient attention to keep the corn alive. During the time for which these experiments were continued, no appreciable effect whatever was produced upon the bugs infesting the stalks. Those where the corn was watered were washed down upon the ground each time, but soon dried off and climbed up the stalk. At the end of this time the bugs under observation all commenced to disappear indiscriminately, without reference to the mode in which the corn had been treated, and the experiment was thus abruptly closed. Enough was learned, however, to show that a succession of heavy daily showers for more than a week would have no appreciable effect upon these insects in that stage. The weather was warm and pleasant, and the conditions under which the experiments were carried on made it impossible to saturate the air. Further light will be thrown on this question by the facts detailed under the succeeding section.

NATURAL ENEMIES.

Insects.

To many the subject of the natural enemies of injurious insects may seem unimportant, since the prospect of utilizing them for an artificial regulation of the numbers of destructive species is somewhat remote. But with regard to such insects as are still under investigation, no fact can be said to be unimportant, for the reason that the most insignificant data may, for all that we know to the contrary, lead finally to the most useful conclusions. Further, a practical knowledge of the economy of the injurious species is not limited to a knowledge of the methods of destroying them or preventing their injuries. It is often scarcely less useful to be able to predict the amount of their injuries and the length of time over which these will probably extend; and such prediction must almost always take into account the variety, number, rate of multiplication and activity of their natural enemies. The gardener, for example, whose produce seems threatened by hordes of plant-lice, may rest easy when he sees that the number of their parasites or carnivorous enemies is rapidly increasing, since the time must be short until these entirely check the multiplication of their prey. Again, although no successful attempt has yet been made to increase the number of our insect friends by special or artificial measures at any given time or place, the possibility of the final success of such efforts is always to be borne in mind. Cases are not infrequent, however, in which it is possible to avoid involving the enemies of a pest in measures taken for the destruction of the pest itself; so that the beneficial species may easily be made to preponderate relatively to the number of the injurious species remaining; but for this a thorough knowledge of the economy of both is of course essential. Finally, since the conditions of insect life vary greatly from year to year and even from generation to generation, a species of hitherto trivial significance may hereafter rise to first-class importance as a check upon the ravages of an insect enemy.

For these and other reasons, it has been customary for all writers on economic entomology to give descriptions and life histories of all known enemies of the injurious insects treated.

The earliest reference to insect enemies of the chinch-bug, which has come to my attention, is in a paper by Mr. B. D. Walsh, upon insects injurious to vegetation in Illinois, published in the fourth volume of the Transactions of the Illinois State Agricultural Society, for 1859-60. In examining a field of sweet corn in September, he noticed numerous chinch-bugs in the husks (some imagos and some pupæ), and found also quite a number of specimens of four very common species of lady-bugs (Coccinellidæ), all the known American species of which are more or less carnivorous. With the exception of the chinch-bugs, and a few individuals of an allied species of Hemiptera, there were no other insects under the corn husks. "The idea at once occurred to me," he says, "that these lady-bugs were depredating upon the chinch-bugs, and I was confirmed in the opinion upon finding a pupa, which was evidently that of some coccinellid, probably *Coccinella munda*, Say, in the same situation. Now, since the pupa was there, the larva must also have lived there, for it is not the habit of these larvæ to get into holes and corners to complete their transformations; and if the larvæ lived there, there was nothing else for them to live on but the above mentioned two species of bug, the smaller of which never occurs in any great numbers like the larger and more mischievous chinch-bug. That the lady-bugs were then and there preying upon chinch-bugs, I have but little doubt; but it does not necessarily follow that they habitually prey upon chinch-bugs. They might have been driven to prey upon them for lack of more agreeable food; as a cat will sometimes eat bread, when she cannot obtain meat. Nothing but actual experiment and observation can determine the truth in this matter." In the autumn of 1864, Dr. Shimer ascertained that the spotted lady-bug (*Hippodamia maculata*) preys extensively upon the chinch-bug. In a particular field of corn, which had been sown thick for fodder, and which was swarming with chinch-bugs, he found, as he says, that this lady-bug "could be counted by hundreds upon every square yard of ground, after shaking the corn; but the chinch-bugs were so numerous that these hosts of enemies made very little perceptible impression upon them." In a corn-field near Jacksonville, visited by me on the 7th of September, 1882, five species of lady-bugs were found extremely abundant on corn which was undergoing serious injury by hosts of chinch-bugs. There were often as many as fifteen or twenty to a hill, and larvæ were likewise occasionally seen. As they were found on all parts of the corn, traveling about actively among the bugs, the natural inference was that the latter attracted them to the field. Previous studies of the food of this family had shown me, however, that they were not by any means as strictly carnivorous as had previously been supposed, but that they often derived the principal part of their food from the vegetable kingdom. To learn the exact state of the case in this corn-field, I collected a number of all the species seen there, including two larvæ, made careful dissections of a sufficient number of them to give me a fair average of their food, mounted the contents of their alimentary canals and examined them with the microscope.

Three specimens of the common spotted lady-bug (*Hippodamia maculata*) were dissected, but no traces of chinch-bugs were found in their stomachs, while all but about thirteen per cent. of their food consisted of the spores of lichens and various minute fungi, and the pollen of ragweed and other similar plants. Traces of plant-lice were recognized, undoubtedly derived from the common corn plant-louse (*Aphis maidis*), which also abounded in the field. Five specimens of the convergent lady-bug (*Hippodamia convergens*,) had eaten about equal quantities of plant-lice and chinch-bugs, which together made only one-third of their food, the remainder consisting of the same kinds of vegetation as those just mentioned. Three of these beetles, in fact, had eaten no insect food at all. To my great surprise, two larvæ of this species, taken at the same place and time, differed but little in food from the adults. Chinch-bugs and plant-lice in about equal ratios, with fragments of unrecognizable insects, made about one-fourth of the whole, the remaining three-fourths consisting only of vegetation of about the same kinds as before.

The icy lady-bug (*Hippodamia glacialis*) was represented by four specimens taken in this field. The differences between their food and that of the preceding species were purely trivial. Young chinch-bugs composed about eight per cent. of the total, and about eighteen per cent. was plant-lice. All the remainder was vegetation, divided about as before, between pollen of plants and spores of fungi. Lichen spores were also eaten freely, and were estimated at twelve per cent. of the whole.

The nine-spotted lady-bug (*Coccinella 9-notata*) was represented by only a single specimen, which had taken no insect food whatever, but had eaten only fungi.

Three specimens of the trim lady-bug (*Cycloneda sanguinea*) had eaten plant-lice, pollen of flowers, and spores of the usual kinds; but chinch-bugs did not appear in their food. The chinch-bugs taken by all these specimens amounted to only eight per cent. of their entire food, and plant-lice to fourteen per cent., the remainder being of vegetable origin. Only eighteen specimens from this field were dissected, but the contents of their stomachs were of so uniform a character that there was every reason to suppose that they illustrated correctly the food of the family at that time and place. It would therefore seem possible that these beetles were attracted rather by the stores of fungi in the field than by the chinch-bugs and plant-lice.

The condition of the leaves and stalks of the corn, drained and deadened by insect depredations, was such as to afford an excellent nidus for the development of those fungi which spring up spontaneously upon dead and decaying vegetation, and these were in fact extremely abundant. It seems, therefore, probable that whatever credit has been heretofore attributed to lady-bugs as enemies of the chinch-bug must be greatly diminished, partly on account of their preference for fungi, and partly because it is not at all impossible that they were really feeding upon plant-lice, which escaped attention.

In the autumn of 1864, Dr. Shimer made the additional discovery that the chinch-bug was preyed upon by a very common species of lace-wing fly (*Chrysopa floralunda*). These were not quite as abundant as the spotted lady-bug among the corn, but still there were so many of them that he thought there were one or more to every stalk. "Every stroke of the cutter," he adds, "would raise three or four dozen of them, presenting quite an interesting spectacle as they staggered along in their awkward, unsteady flight." And he not only actually observed the larvæ preying very voraciously on the chinch-bugs in the field, but he reared great numbers of them to the mature fly by feeding them upon chinch-bugs. His account of the operations of the larvæ when in captivity is so interesting that I quote the essential part of it: "I placed one of the larvæ in a vial, after having captured it in the field in the very act of devouring chinch-bugs of all sizes, and subsequently introduced into the vial a number of chinch-bugs. They had hardly reached the bottom before it seized one of the largest ones, pierced it with its long jaws, held it almost motionless for about a minute while it was sucking the juices from the body of its victim, and then threw down the lifeless shell. In this way I saw it destroy, in quick succession, about a dozen bugs. Towards the last, as its appetite was becoming satiated, it spent five or more minutes in sucking the juices from the body of one bug. After this bountiful repast, it remained motionless for an hour or more, as if asleep. Never for a single moment during the feast did it pause in the work. When not in possession of a bug, it was on the search for, or in pursuit of others. Occasionally the chinch-bugs would hasten to escape when pursued, as if in some degree conscious of danger."

As the larvæ of these lace-wings are incapable of taking any except liquid food, which they imbibe through their tubular mandibles, there is no question here of the entire correctness of the conclusions. I am in fact able to confirm them from our own note-books.

Mr. Webster reports seeing a larva of Chrysopa feeding on young chinch-bugs in a field of corn at Normal, on the 30th of July, and another was detected in the act on the 5th of August, in some corn which had been transplanted to the laboratory for experiment. Eggs of this insect were also noticed in a field infested by the chinch-bug, but neither bugs nor eggs were very numerous.

The following additional insect enemies are mentioned by Prof. Riley, in his seventh report as State Entomologist of Missouri:

"The insidious flower-bug (*Anthocoris insidiosus*, Say) which is so often found preying on the leaf-inhabiting form of the grape Phylloxera, and which is not unfrequently mistaken for the chinch bug, is quite commonly found in connection with this last, and in all probability preys upon it. The many-banded robber (*Harpactor cinctus*, Fabr.,) also preys upon the chinch-bug. It is quite frequently met with, and I have detected it in the act."

Concerning these, Prof. Thomas says, in the Chinch-bug Bulletin, issued by the Department of the Interior, in 1879: "The most efficient of these aids appears to be the *Harpactor cinctus*, or banded-bug. I received, in 1878, notice from points in the Northwest that it was doing much service in destroying chinch-bugs, but it does not develop in sufficient numbers to make any serious impression on them in the years when they are abundant."

In a field of corn near Normal, I noticed in July on the ground about the stalks and occasionally crawling over the lower parts of these, numerous specimens of an extremely abundant, small, predaceous beetle, (*Agonoderus comma*), which was at that time evidently but just emerging as a perfect insect. As the lower parts of these stalks were likewise covered more or less completely with young chinch-bugs in stages preceding the third molt, and as the beetles were often seen wandering about, it seemed probable that the latter were feeding, at least in part, upon the bugs. Ten specimens were dissected from this field, in four of which fragments of young chinch-bugs were detected, amounting to fully one-fifth of the food of the entire number. One had eaten an ant, of a species likewise very abundant in the same situation. In one, a trace of some insect larva was discovered, while the entire remainder of their food, amounting to about half the whole, consisted of fragments of vegetation, the source of which could not positively be determined. It had every appearance, however, of having been partly derived from the roots of the corn. This abundant predaceous beetle must therefore be added to the list of the active enemies of the chinch-bug. In the field in question, which was not very seriously infested, the number destroyed by them must have been sufficient to diminish appreciably the following brood.

The only mention of ants, in this connection, which I have seen, is in the paper of Prof. Riley, already cited, where he says that two correspondents have reported to him that this insect destroys the eggs of chinch-bugs. This statement, however, lacks verification by dissection. The little ant (*Lasius flavus*) mentioned above, was found by me very common in all fields infested by the chinch-bug, and is, in fact, excessively abundant everywhere. In many fields of sorghum and broom-corn, their extraordinary numbers had attracted the attention of farmers, one of whom told me that he had watched them until he satisfied himself of their usefulness by seeing an ant carrying away a young chinch-bug in its jaws. I dissected a large number of specimens, however, from various fields, with entire success, and found no trace of solid food nor of the characteristic fluids of insects of any kind in any of their intestines, and I am quite of the opinion that they frequented these fields for the purpose of preying upon the exudations from the punctured corn, and possibly also for the excrement of the bugs. The very common habit of these ants of appropriating the fluids exuded by plant-lice, is known to every one, and they have been seen likewise to attend several other hemipterous insects for a similar purpose. I myself saw one of them carrying a chinch-bug in its mouth, but as I also saw them carrying about young corn plant-lice (*Aphis maidis*) for the evident purpose of transferring them to a more suitable situation, I greatly doubt their carnivorous intentions.

Birds.

Concerning the relations of birds to these insects, Prof. Riley remarks: "The common quail of the Middle and Western States (*Ortyx virginiana*), otherwise known as the partridge in the Northern States, has long since been known as a most efficient destroyer of chinch-bugs, and the fact was some time ago published by myself in the 'Prairie Farmer,' and by others in various agricultural journals and reports. We also have the corroborative testimony of Dr. Shimer, who is a good ornithologist. In the winter time, when hard pushed for food, this bird must devour immense numbers of the little pests, which winter in just such situations as are frequented by the quail; and this bird should be protected from the gun of the sportsman in every State where the chinch-bug is known to run riot. It is gratifying to know that this fact has become sufficiently recognized to have gained for the bird legislative protection in Kansas. Prairie chickens are also reported as devouring it, but I do not know that any absolute proof has been given. Mr. J. W. Clarke, of Green Lake county, Wisconsin, also reports seeing the red-winged blackbird feeding on it."

To these statements I have only to add that among the birds shot in 1880, during midsummer, near Normal, when the chinch bug was abundant enough in Central Illinois to cause some alarm, one cat-bird, three brown thrushes and one meadow lark were found to have eaten these insects in barely sufficient number to show that the birds have no unconquerable prejudice against them. A single house wren, shot in 1882, had also eaten a few chinch-bugs. A little collection of fifteen birds representing eight common species killed in a wheat field in which chinch-bugs were abundant and injurious, were entirely innocent of any depredation on them. Not a trace of a single specimen was found in any of the stomachs. From the above it is clear that birds have no special objections to this insect as an article of food, but on the other hand no sufficient preference for it to induce them to search for it in its ordinary situations, and their influence upon its numbers is, and probably must remain, purely trivial.

It is very evident that the effect of the enemies thus far noted, upon an insect as numerous and extraordinarily prolific as the chinch-bug, cannot be very great. Unless they should, under special circumstances, become much more abundant than they have ever yet been found, they could certainly, even under the most favorable conditions, contribute little to the protection of the farmers' crops.

Parasites.

I come now, however, to a class of enemies which have hitherto eluded observation, but which, if they fulfill in future the promise which our present knowledge of them indicates, should be among the most destructive enemies known to insect life.

No class of diseases is more fatal to man or more dreaded and destructive among the domestic animals than the *contagious diseases*, which are propagated from one individual to another by means of some infinitesimal virus. When we remember that not only man himself, but also nearly or quite every animal with whose economy we are fully acquainted, suffers at times immense destruction from diseases of this character, falls a victim, in other words, to microscopic enemies, we may indulge a reasonable hope that those insects less known to us, but many of them scarcely less important, are not altogether free from them; and when we reflect that the number of horses or hogs or chickens could easily be vastly reduced by using a little ingenuity to spread broadcast the germs of their contagious diseases, we need not despair of effecting something in the same direction among our most noxious insect enemies.

We are not without several indications that contagious or epidemic diseases of this nature occur among them at more or less frequent intervals, and, fortunately, we have conclusive evidence of the possibility of propagating such diseases artificially. The earliest suggestion of the artificial cultivation of fungus parasites with a view to their use for controlling insect ravages is, as far as I know, that of Dr. J. L. Leconte, made in a paper read before the American Association for the Advancement of Science, in August, 1873, where, in enumerating the checks available for the suppression of insects, he mentions the "communication of fungoid disease (like pébrine, which affects the silk-worm) to other lepidopterous larvæ," and adds in a foot-note: "I am extremely hopeful of the result of using this method. I have learned of an instance in which, from the communication of the disease by some silk-worms, the whole of the caterpillars in a nine-acre piece of woods were destroyed."

The first description of anything resembling an epidemic or contagious disease among chinch-bugs, we owe to Dr. Henry A. Shimer, of Mt. Carroll, Ill., who published a paper setting forth his observations upon this insect, in the proceedings of the Academy of Natural Science of Philadelphia, for 1867. On pages 78–80 of that volume, he remarks as follows:

"July 15.—A farmer four miles from here informed me that a black coleopterous insect was destroying the chinch-bugs on his farm very rapidly; and, although I found his supposition to be an error, yet I found many dying on the low creek bottom land from the effects of some disease, while they are yet in the larva state—a remarkable and rare phenomenon for insects thus in such a wholesale manner to be dying without attaining their maturity, and no insect enemy or other efficient cause to be observed capable of producing this important result.

July 22.—On the low grounds the young chinch-bugs are all dead from the disease above alluded to, and the same disease is spreading rapidly on the hills and high prairies.

July 28.—In the fields where sixty days ago I saw plenty of eggs, and forty-two days ago an abundance of young chinch-bugs, the imagos are beginning to develop quite plentifully. Great numbers, in all stages of their development, are dying of the prevailing disease.

Aug. 8.—The majority of the chinch-bugs yet alive are in the imago state, but they are being rapidly destroyed by the prevailing epidemic disease, more fatal to them than the plague or Asiatic cholera ever was to man. Scarcely one in a thousand of the vast hosts of young bugs observed at the middle of June yet remain alive, but plenty of dead ones may be seen everywhere, lying on the ground, covered with the common mold of decomposing animal matter, and nothing else, even when examined by the microscope. Even of those that migrated to corn-fields a few weeks ago, in such numbers as to cover the lower half of the corn stalks, very few are to be found remaining alive; but the ground around the base of the corn hills is almost literally covered with their mouldering, decomposing dead bodies. This is a matter so common as to be observed and often spoken of by farmers. They are dead everywhere, not lying on the ground alone, but sticking to the blades and stalks of corn in great numbers, in all stages of their development, larva, pupa and imago.

Sept. 13.—After a whole day's searching in the corn-fields, I have just been able to find two larvæ and a few imago chinch-bugs, against the great numbers alluded to in the corn about this time last year.

This disease among the chinch-bugs was associated with the long continued, wet, cloudy, cool weather that prevailed during a greater portion of the period of their development. The disease was at its maximum during the moist, warm weather that followed the cold rains of June and the first part of July. During the summer of 1866, the chinch-bugs were very scarce in all the early spring, and up to near harvest I was not able, with the most diligent search, to find one. At harvest I did succeed in finding a few in some localities."

On page 234 of the same volume he further says: "The chinch-bug has entirely disappeared from this region, so far as I have been able to observe. I have made diligent search since spring, with the object of obtaining a few living specimens, but up to this time have not succeeded in finding a single specimen. I am convinced that the efficient cause of their destruction exists in the continuation of the epidemic among them. Their overthrow is a cause of great rejoicing among the farmers, and once more, as of yore, they have realized a bountiful wheat harvest. I have but one thing to regret in their annihilation; I neglected to obtain a good supply of specimens, while they might have been secured by the wagon load."

Commenting upon the foregoing statements in the Chinch-Bug Bulletin, already mentioned, Dr. Thomas remarks: "Although the plague among the bugs in this instance appears to have been somewhat extraordinary, yet it is in accordance with facts ascertained in reference to other insects, and as Dr. Shimer is both a competent and reliable authority, we accept his statement as correct, and believe with him that it was owing as the originating cause to the damp season. But we are inclined to believe that the moisture gave rise to a minute fungus as the direct cause of the death of the chinches. I recollect very distinctly of a similar wholesale destruction of house-flies in Southwestern Virginia and East Tennessee in 1849, by an epidemic. So rapidly was the disease propagated, and so great the destruction among the flies, that the utmost caution in cooking and drinking water was necessary. Every moist spot was covered with the dead and dying. This I am satisfied was caused by a fungus. I observed a somewhat similar epidemic prevailing among the grasshoppers in Western Minnesota, Dakota and Northern Iowa, in 1872. All over the plains the dead were seen clasping the stems of grass and weeds, and before I was aware of this fact more than once I approached cautiously to capture a desired specimen, only to find it dead and rigid. In 1877 the rainy season evidently caused an immense destruction of the larvæ of *Caloptenus spretus*."

My own observations upon this interesting subject began on the 3d of August, 1882, at which time I commenced an examination of the fluids of the bodies of specimens of various ages and from various situations, with a view to familiarizing myself with their appearance in the normal condition of the insect, in order that I might be able afterwards readily to detect any departures from that condition which circumstances should develop. On the 5th of August, upon crushing some chinch-bugs under a cover upon a microscope slide, and diluting the fluids with freshly distilled water, I found them often swarming with minute rod-like bodies, which I took to be bacteria, sometimes forming small adherent masses. Careful examination under a power of 1,000 diameters showed that these rods were usually formed of two, and sometimes four, oval particles, joined end to end. Hundreds would often cross the field of view in a minute. In order to determine whether these bacteria occurred in the circulating fluid or in some other part of the body, I cut off the legs and head of a specimen in a small quantity of distilled water upon a slide, allowing the blood to escape. The quantity of the fluid was, however, highly diluted, and I could find but two bacteria. Crushing the remainder of the body of this specimen as usual, bacteria were present, but not abundant. On the 7th of August I repeated this observation several times, with results identical in every particular with those just detailed, except that the bacteria were much more abundant in some of the insects than in others. Appreciating the possibility of the infection of the fluids examined from outside sources, I used every precaution to disinfect all the tools and materials with which I worked. The water with which the fluids of the chinch-bug were diluted had been freshly distilled and re-distilled, and the forceps, knives, needles, slides and cover glasses were all passed through the flame of an alcohol lamp just before being used. In order to assure myself that the bacteria observed came actually from the interior of the bugs, I carefully washed several examples with a camel's-hair brush in a drop of water upon the slide, but could find no bacteria in the fluid used. By crushing the same specimens and treating them as before, the bacteria appeared in the usual numbers. It then occurred to me that it was possible that the corn itself upon which these bugs were feeding was in a diseased condition, and that the bacteria were derived from its juices. I consequently took portions of the pith of several stalks, crushed them upon the slide, and examined the sap with high powers of the microscope. I found, of course, a multitude of minute particles of various kinds and variously aggregated. Most of them were agitated by the Brownian movement, but none of them were recognizable as bacteria. These observations were several times repeated, and I finally stained and mounted some of the solid particles from the sap for more careful study under high powers. On the 9th of August I made a visit to Champaign, and went over the subject with Prof. T. J. Burrill, of the Industrial University there, well known as an authority on everything relating to bacteria. An abundance of the organisms already mentioned were found in the fluids of chinch-bugs examined, but nothing new was discovered. We also determined positively the absence of any similar organisms in the juices of the corn.

On the 10th of August I found that chinch-bugs in the pupa stage obtained at Champaign were swarming with the same bacteria as those observed at Normal.

In order to determine the extent to which these micro-organisms prevailed among other insects, I crushed plant-lice from melon vines and from corn, beetles from various situations, and other insects, but failed to find anything resembling the bacteria of the chinch-bug. Next, wishing to ascertain whether chinch-bugs of different ages and stages of development differed with respect to the abundance of these parasites, (for so I began to consider them), I examined on the 11th a number of specimens from Champaign which had but just passed the first molt. Bacteria were present, but in much smaller numbers than in pupæ obtained at the same time and place. This tallied entirely with previous observations, which had led me to conclude that they were fewer in young bugs than in old. In order still further to test the possibility of their being derived in some way from the food of the insects, I next examined a number of specimens which had been confined in a bottle for several days, until they were nearly or quite starved. A specimen which had just passed the second molt, and was dead, but still fresh and plump, contained the bacteria in immense numbers, many of them aggregated in clusters like the zoöglœa masses of Micrococcus. Other live specimens from the same lot also contained great numbers of them. All the observations made upon this point tended to establish the inference that the micro-organisms were entirely independent of the food ingested,—a fact which placed them definitely in the category of parasites. On the 14th of August, again I found them very abundant, and showing by their connection in strings that they were rapidly multiplying, in a bug which had been confined without food in a bottle for five days. The specimen was sluggish, but could still walk. With a view to locating more exactly their principal seat in the body, I crushed the head, thorax and abdomen of another upon separate slides. Very few bacteria were found in the head. They were much more abundant in the thorax, but not nearly so common as in the abdomen, the fluids of which were literally swarming with them. From this observation it seemed probable that they occurred chiefly in the alimentary canal. To satisfy myself more exactly upon this point, I dissected, on the 15th, a pupa from Champaign, which had been kept without food since the 9th. I separated the entire alimentary canal, with trifling injury, until I attempted to detach it from the body at the vent. As soon as the needles penetrated the rectum, I noticed the escape of an extremely viscid fluid, which formed a delicate film on the surface of the water in which the dissection was made. This fluid was seen by a power of about sixty diameters to contain numerous minute cell-like bodies, which under a high power appeared to be globular masses of bacteria. This viscid film so interfered with the needles and entangled the tissues that the posterior portion of the intestine was torn to fragments, including the Malpghian tubes, but the hard structures were removed from the slide, and the cell in which the dissection was made, together with its contents, mounted for study. Upon pressure with the cover glass, globular masses of bacteria were seen escaping from the stomach, similar in all respects to those previously studied. Immense numbers of free specimens occurred everywhere on the slide, but scarcely anything else.

On the 16th of August, in a field of corn near Normal, belonging to Mr. Conner, from which most of these specimens had been obtained, the chinch-bugs were evidently much less numerous than a fortnight previously, and they were also apparently greatly retarded in development. Not over ten per cent. had reached the pupa stage, and no adults had as yet appeared, while in other fields not far distant, ninety per cent. were pupæ, and many were winged. In the former field several dead bugs were found behind the sheaths of the corn of all ages and sizes, but the mortality had evidently chiefly affected the older bugs. Several were collected, both dead and alive, and studied as usual. The fluids of one freshly dead were swarming with bacteria, as were also those of another in the third stage, which was still alive, but had a swollen and unhealthy look. Taking it for granted that bacteria were most abundant in the alimentary canal, if not strictly confined to it, I next, on the same day, successfully dissected the pupa of a chinch-bug which had been for three days in confinement. I removed the alimentary canal as far as the Malpghian tubes, divided it in the middle, and placed the two parts upon different slides. . Bacteria were present in both slides, but much the most abundant in that containing the posterior part of the intestine. They were nearly or quite as abundant in the water in which the dissection had been made, a fact probably due to the rupture of the alimentary canal during dissection. These bacteria were evidently rapidly multiplying, occurring on both slides in zoöglœa-like masses, and also in strings, of a length to simulate bacilli. On the 22d of August, the condition of things in the field above mentioned was not materially changed, except that the number of bugs had diminished still further, being now reduced, apparently, to about twenty per cent. of that occurring there on the 25th of July. About two-thirds of those seen were pupæ, but in a half hour's search only three adults were found.

In other fields at this time most of the bugs were in the adult stage. Again, many were noticed dead behind the sheaths of the corn and many of the living ones were torpid and could easily be picked up or brushed about without their making active efforts to escape. I examined one of these torpid specimens in the third stage and found an excessive number of bacteria, rapidly multiplying, many of them being in long strings. I also crushed an active specimen in the same stage, and found the parasites numerous but less abundant than in the preceding specimen, and none of them in strings. I also crushed a dead pupa obtained at the same time, still plump and fresh, and found immense numbers of the same bacteria, most of them occurring in pairs. I then crushed an active pupa which contained a great number of bacteria, many of them in fours; scarcely fewer, in fact, than in some dead bodies.

In order to compare the condition of the insects in this field where they were apparently disappearing, with that obtaining in other situations, where no such disappearance was noticeable, I next collected a number of specimens from a small lot of corn, the stalks of which were nearly half covered to the ear with bugs. A few of these were adult, but nine-tenths of the remainder were pupæ. Here and there a dead specimen was noticed, and some were apparently torpid. I crushed an active pupa upon the slide and found plenty of bacteria in its fluids, but clearly fewer than in the specimens examined from the other field. On the 23d I made a more exact comparison by examining in immediate succession the fluids from pupæ taken from both fields. The specimen from a situation where the bugs were apparently dying was swarming with bacteria, while in the example from the other situation but few were found, probably not a twentieth part of those in the individual just mentioned. On the 26th this observation was repeated. From a field where the bugs were abundant and active and where none were found dead, but all had reached the adult stage, I had some trouble to find any bacteria at all, but in an adult from Mr. Conner's field they were very abundant indeed, at least twenty times as numerous as in the preceding specimen. A second observation only confirmed the other. In Conner's field the insects were now still less numerous than before, about ten per cent. of those remaining being adult, and the others all in the pupa stage. On the 4th of September the bugs in this field did not seem to have further diminished in numbers, but were curiously retarded in development. Not more than twenty-five per cent. were adults, nearly all the others being pupæ, with now and then one of the preceding stage. Only one or two were seen dead. In another field, from which collections were made for purposes of comparison, the specimens were nearly all adults. The bacteria were found perhaps more numerous in the bugs from Conner's field than in those from the second, but there was at this time no great difference. On the 18th of September, specimens from Conner's field contained few bacteria, although they were certainly present in moderate numbers. At this time, however, no especial difference could be detected related to a difference of situation, while in torpid specimens the bacteria were apparently no more abundant than in those more active. On the 27th of the month, four bugs were examined from Conner's field, and two from one of the others, but no bacteria whatever were found in any of them. These bugs were taken from the husks of the corn. They were in a sluggish condition, and apparently had ceased to feed.

Believing that I had now obtained as definite proof as was possible by this method that the bacteria observed were the cause of the remarkable diminution of the bugs in one of these fields, I next attempted the artificial cultivation of the microphytes, with a view to getting them free from mixture with other substances, for more careful and convenient study.

I also wished to see whether the exposure of healthy chinch-bugs to fluids containing the bacteria would have any effect upon the insects; and, if it would, whether those so affected would themselves convey the contagion to others.

A number of culture tubes were made, similar in character to those ordinarily used for the pure cultivation of microphytes, and filled with hot infusions of corn and beef, made by boiling the pith of cornstalks and small pieces of beef in a test-tube for fifteen or twenty minutes. Some of these were carefully infected in the usual manner with fluids from crushed chinch-bugs, while others were left free. That containing the corn infusion produced only *Bacterium termo* and *Bacillus subtilis*. The bacteria from the insects developed only in the infected tube containing the beef infusion. In this tube myriads of these bacteria occurred, both in zooglœa masses and as separate individuals, but no other micro-organisms appeared. In one of the fields which had been worst attacked by chinch-bugs, the leaves were dead as high as the ears. Here it was noticed that the sheath of the leaf was often gummed to the stalk by a thick exudation, like half-dried glue. A few dead adults were noticed here, imbedded in mold, but of a different kind from that seen at Jacksonville. When portions of this exudation were moistened and studied under the microscope, the fluid was found thick with bacteria, indistinguishable from those occurring in the bodies of the insects, and the same were thickly scattered through the translucent masses of viscid jelly. The inference was plain that they were derived from the excrement of the chinch-bug, in which they had continued to develop.

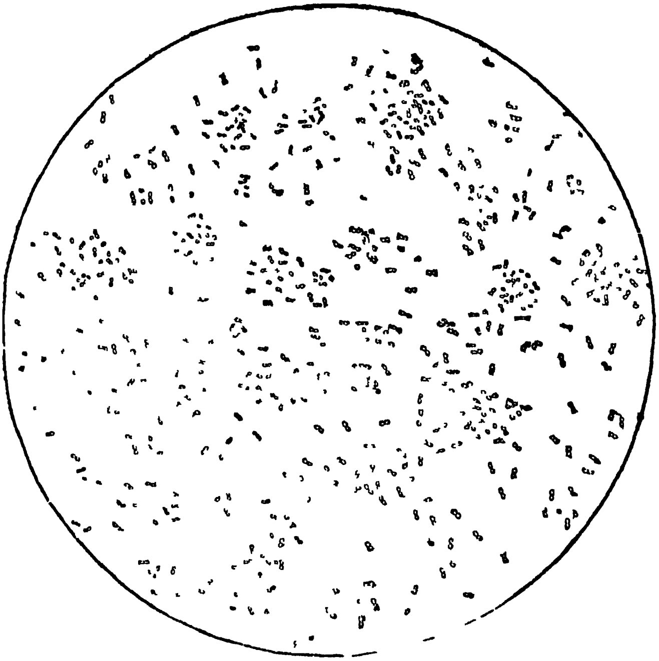

Fig. 7. The chinch-bug bacterium (*Micrococcus insectorum*, Burrill). From artificial cultivation in beef broth. Magnified 1000 diameters.

On the 25th of September, several stained and mounted slides of this material and of the contents of the various culture tubes, were submitted to Prof. Burrill, of Champaign. The slides were carefully studied by him, and to him I owe the determinations of the various forms observed. The insect bacterium was described by him under the name of *Micrococcus insectorum*, in the Eleventh Report of the Illinois Industrial University, in the following terms:

"Cells obtusely oval, isolated or in pairs, rarely in chains of several articles; .000022 in. wide, and .000027 to .00004 in. long, usually about .000032 long; movements oscillatory only; forming zoöglœa (?). In the digestive organs of chinch-bugs (*Blissus leucopterus*). * * * The organism is somewhat similar to, but not identical with, *Micrococcus bombycis*, the 'disease germ' of the silk worm, which was so fatally destructive to the silk industries of France, and which became the subject of the successful studies of Pasteur. The form of the organism approaches the typical shape of Bacterium, being oval and short-cylindrical, with rounded ends; otherwise the characteristics are those of a true Micrococcus."

Although this description was made from a slide of specimens cultivated in the beef infusion, these had been previously carefully compared with fresh specimens from the insects themselves, and ascertained to be unquestionably identical.

In a test-tube of corn infusion boiled and left standing open in the laboratory, where the examinations of these various fluids were in progress, immense numbers of these Micrococci developed, many of them single or double, but most in chaplets, like strings of beads. Careful measurement of individuals showed their identity with those above described.

At this time, the general disappearance of the chinch-bug, and the consequent difficulty of obtaining specimens for experiment, put a period to the investigation, and the solution of the questions still remaining was necessarily postponed to another year.

The studies here reported demonstrate the frequent association of a peculiar bacterium (Micrococcus), essentially parasitic in character, in the intestines of the chinch-bug, with a general diminution of numbers among those affected, together with an apparent retardation of their development. They also show that this bacterium is easily cultivable in both vegetable and animal infusions, and probably multiplies spontaneously in the fluid exudations of corn-stalks punctured by the bugs. The final step of the proof that it injuriously affects its host is yet lacking, and cannot be supplied until an opportunity is had to expose the insect artificially to its influence.

Besides this bacterium, another parasitic fungus, certainly destructive in character, was found to infest the chinch-bug; and this seems to me more likely than the other to have been concerned in the wholesale disappearance of the bugs described by Dr. Shimer. I have already mentioned the occurrence of many dead specimens in a field at Jacksonville, attached to the stalks and leaves of the corn and buried in the silk. These were all embedded in a dense mat of white fungus threads, which sometimes almost hid the body. The general resemblance of this growth to the fungus which commonly attacks flies in autumn, often fastening them to the window pane, and bursting from their bodies in the form of a white efflorescence, led me to suppose that this chinch-bug fungus was one of the same character, and not a simple mold, forming after death. The bugs affected were both pupæ and adults. Subsequent study with the microscope demonstrated the correctness of the above surmise, as the fungus in question proved to belong to the same genus (Entomophthora) as that infesting flies; a fact of which I was assured by Prof. Burrill, to whom some specimens were submitted. It was not possible to determine the species of the fungus in the stage represented by my collections, but it was apparently different from that of the house-fly. Recent studies of these fungi by European biologists have confirmed the prevailing opinion that they are true destructive parasites, the causes and not the consequences of disease and death. It seems not impossible that the white mold, of which Dr. Shimer speaks in the paragraph I have cited, was really this parasitic fungus; and if so, it was probably the cause of the epidemic disease which he describes. This fungus often runs its course to a fatal result, without making any external appearance, bursting forth only after death. It is proper to say, however, that I also found three or four dead bugs at Normal, seemingly in the same condition as those above described, but which were really simply buried in a harmless mold, as was easily seen with the microscope. The parasitic forms are distinguished from the molds at a glance, by the fact that in the former the threads are not divided off into cells by cross partitions, as they are in the latter.

Remarkable evidence of the wholesale destruction of chinch-bugs by this or some extremely similar fungus has lately been given me by Hon. J. W. Robison, of Tazewell county, whom I have learned to trust implicitly as a very close and intelligent observer. He remembers that several years ago, the chinch-bugs in grain fields died in vast numbers, accumulating in piles of as many as half a bushel in a place, so that the masses could be seen at some little distance among the grain. These collections of the bugs would be partly dead and partly living, many of the former being covered with a white mold bursting from their bodies, while the abdomens of the latter would be distended and brown and smooth, and the bugs themselves very sluggish. The abdomens of these living bugs would frequently break off at a touch, and even fall to powder, the living thorax afterwards walking away. The insects attacked and killed were of all sizes and ages. The phenomena here described are so closely similar to those appearing in the house-fly as a result of its fungus affection, that there can be little question of their substantial identity. According to Mr. Robison's observations and recollections, this affection of the chinch-bugs is much the most destructive during periods of moist and sultry weather, such as is usually more favorable to fungus growths in general.

I have already shown the possibility of artificially cultivating the parasitic bacteria which I discovered; and that this second parasite could likewise be successfully reared, is rendered very probable by the experiments on a similar fungus made by an eminent Russian naturalist (Elias Metschnikoff), as published in the Zoologischer Anzeiger for 1880, pp. 44-47. This article is of such special importance and interest in this connection that I translate it almost entire:

"The researches which I shall now report were undertaken by me last year [1878], with the purpose of discovering some means of combating an injurious beetle, *Anisoplia austriaca*, and some other species of the same genus, extremely widely distributed throughout all Southern Russia. I first established the fact that the larvæ of Anisoplia live in the earth, which subjected it to several diseases. One of these was induced by the attacks of *Leptodera denticulata*, Schn., while the others were caused by parasitic plants. One very widespread putrid disease has a great resemblance to the 'pébrine' of the silk-worm, but is distinguished by the fact that it is produced by parasitism of a species of Bacillus in the blood, while the true pébrine is due to a Micrococcus. Another disease, which I have called the 'green muscardine,' is occasioned by a parasitic fungus, whose spores, appearing after the death of the host, have a characteristic green color. The fungus itself has a close resemblance to the species of Isaria, its oval spores sometimes forming chains, and may be called *Isaria destructor.* The spores sown upon the skin of the beetle larva send forth a sac-like process, which penetrates the cuticle and forms a mycelium under the skin. Oval conidia then appear, which enter the blood, and are remarkable for an extraordinarily rapid multiplication by fission and budding. Later they are transformed into necklace-like gonidia (using this word according to Cohn), and fill the entire body of the insect. After the death of the larva, fine hyphæ proceed from these gonidia, which soon form a white covering over the whole body of the insect. Later, chandelier-like bundles

of sterigma (Sterigmenbundel) spring from these, and bear the above-mentioned green spores. After two or three weeks the whole body of the insect is converted into a heap of dusky green spores. Several of the attempts made to infect *Anisoplia* larvæ with these green spores were successful, while in a few cases the grubs remained healthy for a long time. The results were in all respects the same as those in DeBary's experiments with *Isaria farinosa.* Anisoplia larvæ killed by the green muscardine have now been found in widely separated regions of Southern Russia. · I have also found the disease attacking another injurious insect among us, the turnip beetle (*Cleonus punctiventris*)? During the present summer the green muscardine appeared among these beetles as a destructive epidemic. It attacks the adult insect, as well as its eggs, larvæ, and pupæ. By August, at a time when the epidemic had not yet run its course, about forty per cent. of the entire generation of this year of *Cleonus punctiventris* was destroyed by it. All attempts at infecting these beetles, especially their larvæ, resulted fortunately. Ninety Cleonus larvæ, which were brought in contact with muscardine spores for a short time, all died in the course of twelve days. Upon many of these one could very easily follow the germination of the spores. The deadly effect of the disease began to show itself on the fifth day after the infection, which short period was apparently explained by the thinness of the cuticle of the larvæ. Of the number mentioned above, sixty-two died of muscardine, and twenty-eight from other causes, in part of pebrine. Upon the beetles the muscardine worked somewhat more slowly, but with equal certainty. Fifty-eight recently transformed beetles were infected, and in the course of fifteen days fifty-two were dead of muscardine, and six of other diseases. The largest number died on the seventh day. These, together with many other experiments and observations, justify the conclusion that *Isaria destructor* really produces an epizootic among the injurious insects mentioned, similar to that which *Botrytis bassii* produces in the silk-worm. This comparison to the fungus just mentioned is all the more appropriate since *Cleonus punctiventris* is likewise subject to a disease produced by this same Botrytis. The white muscardine I could find only upon hibernating beetles, never upon their larvæ or pupæ, or upon imagos recently transformed. When I had reached the results above described, I thought it possible to spread the green muscardine artificially by sowing spores.
* * * * In order to procure the necessary quantity of spores with which the earth inhabited by the grubs and Cleonus larvæ must be sown, it was at first important to find some medium in which the fungus could be cultivated outside the body of the insect. I easily succeeded in finding a method by which to induce this insect fungus to send out long runners, which formed a true mycelium. For this it was only necessary to bury in moist sand insects which had died with muscardine, and to leave them there a fortnight. It was much more difficult, however, to induce the growth of the fungus in organic fluids. It was indeed easy to cause the *Isaria destructor* to produce new spores in a hanging drop of sugar, but for a long time I did not succeed in this experiment upon a larger scale. I am very much indebted to my colleague, Mr. A. Werigo, professor of chemistry in Odessa, that he first called my atten-

tion to beer mash as a cultivating fluid. If one boils a little of this in a flask, and, after cooling, sows it with spores, a rich mycelium develops, both within the fluid and upon its surface, and this produces the spores again. To guard against the invasion of other fungi, which will ordinarily suppress the Isaria growing outside the body of the insect, the flask must be stopped with a little disinfected cotton or asbestos."

By Dr. Shimer, the enormous destruction of chinch-bugs in 1 66 was ascribed to the indirect effect of the wet and cool weather. By Mr. Walsh, who discredited the idea of an epidemic or contagious disease, it was accounted for as the *direct* effect of moisture.* The phenomena connected with the action of parasites, which I have above described, were apparenty independent of any appreciable general cause, as they were most manifest at a time when the weather had been warm, dry, and altogether unexceptionable for from one to two months. It is not unlikely, however, that wet weather may have the effect to stimulate the development of this parasite, either directly or indirectly—a hypothesis which will reconcile all the facts now known, as well as the conflicting explanations of them which have been hitherto put forth.

The most important facts under the head of natural enemies may be thus recapitulated:

The chinch-bug is subject to attack by all the common lady-bugs (*Coccinellidæ*) and their larvæ, by a common predaceous ground beetle (*Agonoderus comma*), by the larva of the lace-wing fly, and by one of the robber-bugs (*Harpactor cinctus*). A number of *Coccinellidæ*, however, captured among the chinch-bugs, were shown by dissection to have taken only about eight per cent. of their food from these insects, the remainder consisting of plant-lice, spores of molds and lichens, and the pollen of flowering plants; while the predaceous ground-beetle mentioned (*Agonoderus*) was found to have derived about one-fifth of its food from the bugs, and the remainder partly from other insects, but chiefly from the tissues of ordinary plants. A few common birds are shown to feed upon chinch-bugs occasionally. The joint effect of these various ordinary enemies is not necessarily insignificant, but is certainly of no great present importance.

On the other hand, a much more important *role* is apparently played by certain obscure parasites, not previously detected. One of these is a minute bacterium (*Micrococcus insectorum*, Burrill,) infesting the alimentary canal, closely allied to the micrococcus found in the stomach and intestines of silk-worms, and now known to cause some of the destructive diseases of that insect. From the fact that these parasites were extremely abundant in specimens from a field where the bugs were rapidly dying, while in those from adjacent fields there were relatively very few, it was considered probable that they were related to this destruction of the bugs. This conclusion was supported by the fact that they were more abundant in old bugs than in young, while the mortality referred to evidently also chiefly affected the older individuals. It was found easy to cultivate the bacterium artificially in organic infusions, but no opportunity offered to apply it to healthy insects. Until this experiment is made and the effects carefully studied, it must remain *possible* that the coincidence noted was merely accidental, and of no particular significance.

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*American Entomologist, Vol. I, p. 175, 1869.

Another parasite discovered is similar to that well known as a common enemy of the house fly, and belongs to the same genus (*Entomophthora*). This attacks both old and young chinch-bugs, and finally embeds their bodies in a mass of mold. There is some reason to believe that this was the active agent in an immense destruction of chinch-bugs which occurred in Northern Illinois in 1865, as described by Dr. Shimer, of Mt. Carroll. Evidence is adduced of the possibility of artificially cultivating this parasite also, and applying it to the destruction of insects.

TOPICAL APPLICATIONS.

Topical applications for the destruction of insects are often of the highest use to the horticulturist, whose crops are much more valuable per acre than those of the farmer, and both require and repay much more careful and continuous personal supervision and manual labor.

In agriculture, however, such measures have necessarily been of little service, especially where farms are large and the work is done principally by machinery. To attempt to destroy the chinch-bugs of any considerable territory by the direct application of even the cheapest substances, would involve an amount of additional labor which could not be had all at once in the country, no matter how profitable its employment might be. The small farmer has, however, a certain very decided advantage in fighting insects, over one who cultivates the soil on a large scale; and to him a substance which, at small cost, shall destroy the bugs in his wheat and corn, may make the difference between a total loss of his income for the year and the preservation of his crops at the expense of a little additional labor and outlay. The manner in which the chinch-bug most commonly invades the corn-field, entering it on foot from one side while yet unable to fly, and attacking first the outer rows, affords about the only opportunity to resist its assault upon the corn. Here its advance has often been checked by boards set on edge and daubed with coal tar, or by plowing and harrowing frequently a strip along the field, which the bugs find it difficult to cross. Here, also, topical applications may be used with fair prospects of usefulness. If attacked while congregated in a comparatively small space, and before they have spread throughout the field (as they will usually do as soon as they have acquired the power of flight) the bugs may be exterminated before they have had an opportunity to do very serious damage, provided that some inexpensive substance of easy application may be found to destroy them.

The only insecticide which has hitherto been found effective under these circumstances, as far as I know, is hot water, which has occasionally been used on a small scale; but it is of course difficult and quite expensive to heat, keep hot, and apply a sufficient quantity of water to protect a field of corn. Believing it advisable to exhaust every possible expedient for controlling the ravages of this most destructive enemy of our crops, I early began experiments with emulsions of kerosene, which have the advantage of cheapness and abundance of the materials composing them, and have been found deadly in small quantities to many other insects. The principal drawback to the use of these emulsions is the labor of preparing them, but this objection was obviated by the discovery that a simple mechanical mixture of kerosene and water is equally effective and equally harmless to the corn with a carefully prepared emulsion. As the kerosene emulsions have many other uses than the one here given, taking effect upon by far the greater part of the soft-bodied insects of all kinds, it will be worth while to give here an account of the method of preparing them. The following is from an article by Prof. Riley, published in the *Scientific American* for May 27, 1882:

"There is a safe and ready method of diluting kerosene and similar oils, and of rendering them miscible with water. The difficulty of diluting them, from the fact that they do not mix well with water, has been solved by first combining them with either fresh or spoiled milk, to form an emulsion, which is easily effected; while this, in turn, like milk alone, may be diluted to any extent, so that particles of oil will be held homogeneously in suspension. Thus, the question of applying oils in any desired dilution, is settled, and something practicable from them may be looked for. Mr. Hubbard has had no difficulty whatever in making a perfectly stable emulsion, and the secret of so doing consists in the proper amount of churning,—for the whole process may be comparable to butter-churning, with the exception that the oil and milk, in any desired proportion, must be much more violently churned for a period varying with the temperature from fifteen to forty-five minutes. On continued churning, the liquid finally curdles, and suddenly thickens to form a white and glistening butter, perfectly homogeneous in texture, and stable. The whole amount of both ingredients solidifies together, and there is no whey or other residue. If, however, the quantity of the mixture is greater than can be kept in constant agitation, a portion of the oil is apt to separate at the moment of emulsification, and will require the addition of a few ounces of milk, and further churning for its reduction. This kerosene butter mixes readily with water, care being taken to thin it first with a small quantity of that liquid. The time required to 'bring the butter' varies, with the temperature: at 60 F., half to three-quarters of an hour; at 75°, fifteen minutes,—and the process may be still further facilitated by heating the milk up to, but not past the boiling point. Either fresh or sour milk may be used, and the latter is even preferable. The presence of kerosene does not prevent or hinder the fermentation of the milk; on standing a day or two the milk curdles, and although there is no separation of the oil, the emulsion thickens and hardens, and requires to be stirred, but not churned, until it regains its former smoothness. Exposure to the air not only permits the evaporation of the oil, but also of the water necessary to hold the oil in emulsion, and the kerosene slowly separates as the emulsion dries up and hardens.

"The churning can be done very satisfactorily through an ordinary force-pump, such as the well-known aquæpult, it being repeatedly forced from one vessel to another. If sour milk is used there will be no further fermentation, and when kept protected from the open air in a tight vessel the butter endures for any length of time. The emulsion may be made of any desired strength, as the quantity of milk required to hold the oil does not exceed ten per cent. Emulsions containing over eighty per cent. of oil are, however, not readily held in suspension in water, on account of their light specific gravity,—yet those containing less than thirty per cent. of oil lose value as insecticides, as the oil loses some of its power in becoming emulsified. In other words, the killing-power of a diluted emulsion depends, not so much on the amount used, as on the percentage of oil contained in it. Churn until the whole solidifies and forms an ivory-white, glistening butter, as thick as ordinary butter at a temperature of 75 F.; if the temperature of the air falls below 70°, warm the milk to blood-heat before adding the oil. The diluted wash resembles fresh milk, and if allowed to stand, in two or three hours the emulsion rises as a cream to the surface. The butter should therefore be diluted only as needed for immediate use, and the mixture should be stirred from time to time."

My experiments with kerosene were made first upon hills of corn transplanted to the laboratory, and the results were always verified afterwards by application in the field upon a larger scale. The emulsions used were of various strengths and composition, and were variously diluted with water, soapsuds, and a solution of potash. The following table of solutions and emulsions will be convenient for reference in describing the experiments:

Solutions with which Dilutions were made.

1.	Soapsuds	1 lb. soap	to 10 gal.	water
2.	"	1 " "	" 20 "	"
3.	Potash	1 " potash	" 50 "	"

Emulsions as diluted.

		Per cent. of Kerosene.
A.	2 parts kerosene, 1 part milk, 45 parts water	4
B.	1 part " 1 " " 18 " "	5
C.	1 " " 1 " " 18 " solution 1	5
D.	1 " " 1 " " 38 " " 2	2½
E.	1 " " 1 " " 38 " water	2½
F.	1 " " 1 " " 38 " solution 3	2½
G.	1 " " 1 " " 30 " " 2	3
H.	1 " " 1 " solution 1, 18 parts solution 2	5
I.	1 " " 1 " " 1, 13 " " 2	6⅔

On the 22d of July, I transplanted several hills of corn to the laboratory, placing them in boxes about a foot and a half wide by two feet in length. The corn was from two to three feet in height at this time. Each hill was infested with several hundred chinch-bugs, which were of various sizes below the pupa stage. They were largely hidden behind the sheaths of corn, but were also exposed above the leaves and upon the outer surface of the sheaths. All the corn was waered once, immediately after transplanting, and bore the removal well. It was kept under shelter, but in well lighted rooms, and freely exposed to the air.

Experiment 1.—July 22, at 9 P. M., I applied to a single hill from half a pint to a pint of emulsion "A," throwing it with a small syringe upon the bases of the stalks and surface of the ground. For a check upon this experiment, I applied water to another hill in the same quantity and in the same way. July 23, 9 A. M., the bugs on the first hill were still alive, but torpid. July 24, at 11 A. M., about one-fifth of the bugs were completely dead; the others were still alive, but most of them torpid. July 26, 3 P. M., thirty of the bugs were alive and back upon the stalks, apparently uninjured, but all the remainder were dead. July 27, 10 A. M., the hill was in the same condition. Treated again with emulsion "B," on the 28th, when all the bugs were killed. Those on the hill to which water was applied were not injured in the least, but all were back again upon the stalks in twenty-four hours.

Experiment 2.—Two hills were now selected in the laboratory, each containing three stalks of corn about two or three feet high. The first was thoroughly treated at 4 o'clock on the afternoon of the 24th, with emulsion "B," which was thrown with a syringe upon the lower six inches of the stalk and sheath, where it was about one-fourth covered with young bugs. The other hill was similarly treated with water. At ten the next forenoon about four-fifths of the bugs were dead upon the first hill, some of them on the corn, and others on the ground. Several small groups were still alive under clods, but some of these were also dead. At 10 A. M. on the 26th, only thirty or forty bugs were found alive upon the corn, and all the others were dead. On the 27th the situation was unchanged. The bugs upon the hill drenched with water were at first washed down upon the ground, but in a few hours were back again upon the stalks uninjured.

Experiment 3.—I next applied with a hand force-pump eleven pints of emulsion "B" to eighteen hills of corn in the field, selecting those worst infested by the insects. The weather was hot, and bright and dry. To prevent interference from without, the hills treated were surrounded by fence boards placed on edge and daubed plentifully with coal tar. This application was made at 3:30 P. M. of the 25th, and at 11:30 A. M. of the following day about four-fifths of the bugs were entirely dead. The others were active and apparently in process of recovery, although some of the fluid still remained behind the sheaths of the corn. On the 27th of July, at five P. M., I made a careful comparison of the hills treated with others adjacent which had not been sprayed, and found that the chinch-bugs upon the latter were about five times as numerous as upon those to which the emulsion had been applied. The bugs remaining within the enclosure were now fully revived and at work upon the corn.

Experiment 1.—On the 27th of July, at 10 A. M., I applied about a gill of an exceedingly strong solution of soapsuds, without kerosene, to a hill in the laboratory. In twenty-four hours about four-fifths of the bugs were dead, and most of the remainder back upon the stalks.

Experiment 5.—On the 28th, a half pint of emulsion "C" was thrown upon a hill in the laboratory, at eleven in the forenoon. At 5 P. M., the bugs were all dead but about a dozen. A careful search of the ground and corn three days later discovered but fourteen bugs.

Experiment 6.—In order to ascertain whether anything was gained by an application of the emulsion at night, I treated carefully thirteen hills in the field with emulsion "C," applying about half a pint to each hill, at 7 P. M., of the 28th. The night was warm and dry, and next morning at 9 o'clock nine-tenths of the bugs were dead. Those alive were nearly all under the clods, where some of the groups were molting. A few, accidentally protected by a fold of a leaf, escaped entirely. Pupæ were apparently affected as easily as younger individuals. On the 29th, at 5 P. M., it was estimated that ninety to ninety-five per cent. were dead, scattered everywhere on the corn, behind the sheaths and exposed on the stalks and leaves, and on the ground at the base of the hill. Most of those alive were on the stalks, but some were yet under clods, and even *in* them. On the 2d of August, at 5 P. M., it was concluded that four-fifths of the bugs were finally killed, while the others were back behind the sheaths of the corn at work as usual.

Experiment 7.—On the 31st of July, I spread upon a glass slide as thin a layer of emulsion "D" as I could apply with a camel's-hair brush, and allowed five bugs to crawl over it. Four, whose bodies were reached by the fluid, died in an hour, but the one remaining was unaffected.

Experiment 8.—Upon the same day five ounces of emulsion "D" were applied to a hill of corn in the laboratory, at 9 A. M. At 5 P. M., about ninety per cent. of the bugs were dead.

Experiment 9.—August 1, at 12 M., half a pint of emulsion "E" was applied to a hill in the laboratory. On the 2d, at 8 A. M., from one-half to two-thirds of the bugs were dead, and those alive were collected upon the highest points of ground. August 4, at 8 A. M., probably three-fourths of the bugs were found to have been killed.

Experiment 10.—August 1, 12 M., applied one half pint of emulsion "D". August 2, 8 A. M., nine-tenths of the bugs were dead. Those alive were nearly all on the ground. This dilution with soapsuds holds much better than that with water.

Experiment 11.—At 12 M., of the 1st, half a pint of emulsion "F" was also applied. On the 2d, at 8 A. M., one-half of the bugs were dead, the others were on the ground and on the stalks. On the 4th of August nearly all were dead.

The three experiments just described were intended to test the comparative efficiency of water, soapsuds and a solution of potash, as diluents of the emulsion. The first effects were evidently in favor of soapsuds, showing that this is at least most prompt in its action. The comparison of final effects was interfered with by the fact that at about this time the bugs on all the hills commenced to die indiscriminately, as already detailed.

Experiment 12.—At 2 P. M., on August 2, half a pint of emulsion "D" was applied to the worst hill in the laboratory. August 3, at 9:30 A. M., nine-tenths of the bugs were dead; the others were scattered on the ground. August 4, 8 A. M., ninety-five per cent. of the bugs were dead, and the others were still torpid on the ground.

Experiment 13.—On the 2d, at 5 P. M., applied one-half pint of emulsion "F" to a hill in the laboratory. At 10 A. M., on the 3d, fully ninety per cent. of the bugs were dead.

Experiment 14.—The next experiment was made on the 2d of August, at 5 P. M., when a half-pint of emulsion "C" was applied to several hills of corn in the field. At 11 A. M. on the following day, nine-tenths of the bugs were found to be dead.

Experiment 15.—On the 18th of August one of my assistants, Mr. A. B. Seymour, applied a quart of emulsion "D" to four hills of corn at noon, stirring the mixture just as it was applied, and at 6 P. M., nearly all the bugs were found to be dead.

Experiment 16.—He next applied a quart of emulsion "H" to three hills of corn at 6 P. M, with equal effect.

Experiment 17.—In another experiment, made on the 19th of August, with the same fluid, ninety to ninety-five per cent. of the bugs were found dead three days later. A half-pint was poured upon each hill from a common garden sprinkler.

Experiment 18.—On the 22d he sprinkled upon different hills equal quantities of emulsions "D" and "H," and found, two days later, that about ninety-five per cent. of the bugs treated with emulsion "D" were dead, and about three-fourths of those upon which emulsion "H" had been used.

Experiment 19.—On the 18th he made a mechanical mixture of one part of kerosene to twenty parts of the second solution, applying one quart to two hills of corn at noon, sprinkling the entire plant. At 6 P. M. nine-tenths of the bugs were dead, and no injury to the corn appeared.

Experiment 20.—On the 22d, at 12 M., he made an experiment to compare the effects of an emulsion of soapsuds, one of fresh milk, both diluted with clear water, and also the simple mixture of kerosene and soapsuds. He applied them with a sprinkler, and examined the hills at 9 A. M. of the following day, when all the fluids used were found to have been about equally effective, destroying from ninety to ninety-five per cent. of the bugs.

Experiment 21.—In a final trial, two hills each were treated at the same time with one-half pint of emulsions "H," "I," "B" and "K," and with mechanical mixtures of kerosene and water—one containing two and one-half per cent. of kerosene and the other three and one-half per cent. The result of this experiment showed that the soap emulsion was a little less effective than that with milk ("H" destroying only about sixty per cent. of the bugs, while "B" killed eighty per cent.), and that the simple mixtures were the most effective of all. That containing one pint of kerosene to forty of water, killed eighty per cent. of the bugs, while the mixture of one to thirty killed ninety-eight per cent.

No visible injury to the corn resulted from the use of any of these preparations, except in a single instance, where the emulsion diluted with soapsuds was poured on the leaves of a young hill of corn. Settling in the bases of the leaves where they were rolled together, the water evaporated, leaving the soap in a very strong solution, and this wilted the leaves and killed the top of the stalk.

As a general result of these various experiments with kerosene mixtures upon the chinch-bug, it may be said that a simple mechanical mixture of water and three per cent. of kerosene, is deadly to bugs of all ages, and does not injure half-grown corn if the fluid is kept well shaken up. It is possible that on more tender vegetation it might be necessary to protect the plant by first making an emulsion of the oil with milk or soapsuds, which can then be diluted freely with water or suds to any desired extent. The soap in the suds emulsion seems, however, partly to mask the kerosene, at least when common hard soap is used. Soapsuds in the proportion of one pound of soap to twenty gallons of water was found a better diluent for the emulsion than water, but should not be applied to plants which will catch and hold a portion of it for any length of time. The evaporation of the water will so increase the strength of the suds as to injure the plant.

When applied by pouring or sprinkling, about one-half pint of fluid to each hill of corn was needed to destroy the bugs, from the ground to a height of about two feet. If some device for throwing a spray was used, a much smaller quantity would doubtless suffice.

As refined petroleum sells for about twelve cents per gallon when bought by the barrel, the cost of an effective mixture would be about four mills per gallon, or not far from $8 for a quantity sufficient to treat an acre of corn. By using cheaper grades of petroleum and more effective modes of application, the cost per acre could doubtless be reduced to about $5, exclusive of the labor of distribution. The average value of an acre of corn at the time when it is usually attacked by the bugs is estimated by intelligent farmers at $15, and it therefore seems likely that it will sometimes pay to fight the bugs in the corn-field with kerosene,—at any rate where water is abundant and convenient, and the necessary labor can be had.

Further experiments are needed to determine the best apparatus of distribution and the cost of actual application. A sprinkler to be drawn by one horse between the rows could easily be devised which would answer a very good purpose, going over the field at least as fast as a one-horse plow; but spraying machines similar to those used in southern cotton-fields would probably be more effective.

It is also not impossible that this fluid could be made useful in fields of small grain, especially as the chinch-bug appears first in patches here and there, spreading from these gradually through the field.

THE STRAWBERRY CROWN BORER

(*Tyloderma fragariæ*, Riley.)

(Order COLEOPTERA. Family CURCULIONIDÆ.)

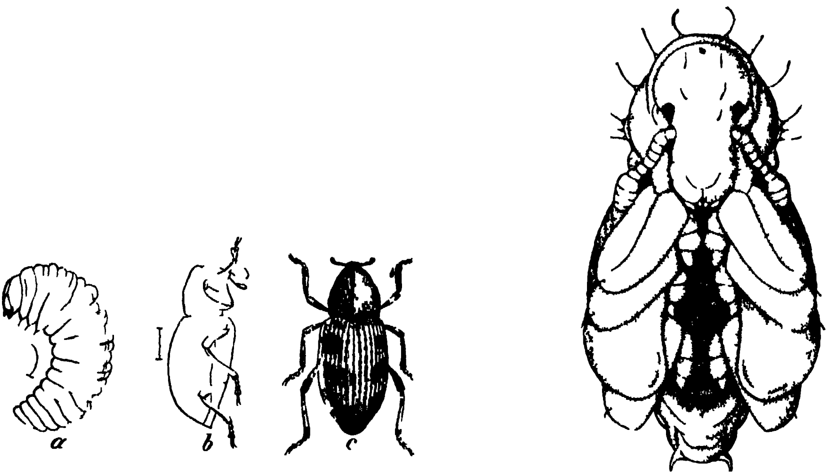

Fig. 8. The Strawberry Crown Borer (*Tyloderma fragariæ* Riley): a, larva; b, adult beetle, side view; c, adult, dorsal view; d, pupa from beneath.

(A thick-bodied, white grub, about a fifth of an inch in length, with a brownish yellow head, excavating the crowns of the strawberry during the summer and fall.)

This insect is one of the principal obstacles to successful strawberry culture in those localities where it has gained a footing and anything throwing light upon possible methods of controlling its injuries cannot fail to have a very considerable value to horticulturists, even in those regions hitherto exempt from its attacks. Its characters and life history should be perfectly understood in order that all suitable precautions may be taken against invasion by it, and that its first appearances may be recognized if unfortunately it should be transported beyond its present range. Although it has hitherto done but little harm in the northern or central part of this State, the beetle certainly occurs as far northward as Minnesota, and there is no security that it may not become injurious wherever introduced.

This insect has been known as one of the worst enemies of the strawberry for more than fifteen years, but it has never yet been treated in our State reports, and, indeed, its life history is but just completed.

The first published notice of its injuries of which I am aware occurs in Prof. Riley's third report as State Entomologist of Missouri, published in 1871. "This insect," he says, "has done considerable damage to the strawberry crop in the southern portion of Illinois, especially along the line of the Illinois Central Railroad; and I have seen evidence of its work in St. Louis county, Missouri. At the meeting of the Southern Illinois Fruit Growers' Association, held at South Pass in November, 1867, several complaints were made by parties from Anna and Makanda of a white worm which worked in the roots of their strawberries, and in 1868 the greater portion of the plants of a ten acre field at Anna, belonging to Mr. Parker Earle, was destroyed by it." He further states, partly from his own knowledge and partly from information received from strawberry growers, that the grub hatches from the middle of June to the middle of July in Southern Illinois, and later farther north, from an egg which, in all probability, is deposited in the crown of the plant, and that it immediately commences to bore its way downwards into the pith. According to him, it undergoes its transformations to the pupa and beetle stage within the root, the adult making its appearance above ground during the middle of August. He infers that the beetle feeds upon the leaves of the strawberry, but is doubtful whether it hibernates as a beetle or produces a second (autumnal) brood of the worm, hibernating in the roots in the larval stage. Little of importance has hitherto been added to this account, but repeated observations upon this insect, made by me since last August, have enabled me to clear up its fall and winter history, and to add some other facts of practical importance.

DESCRIPTION.

As already intimated, this insect, in the form in which it does its injury, is the grub or larva of one of the snout beetles, belonging, in fact, to the same family as the peach curculio. It was first described by Prof. Riley, in the report already cited, and his description of the adult is herewith given. The larva and pupa are described from fresh materials obtained this fall from strawberry fields in Southern Illinois.

"*Analcis* [*Tyloderma*] *fragariæ*, n. sp.—*Imago.*—Color deep chestnut-brown, subpolished, the elytra somewhat lighter. Head and rostrum dark, finely and densely punctate, and with short, coarse, fulvous hairs, longest at the tip of rostrum; antennæ rather lighter towards base, 10-jointed, the scape much thickened at apex, joint 2 longest and robust, 3 moderately long, 4-7 short, 8-10 connate, and forming a stout club. Thorax dark, cylindrical, slightly swollen across the middle and uniformly covered with large thimble-like punctures, and with a few short, coarse, fulvous hairs, unusually arranged in three more or less distinct longitudinal lines; pectoral groove ending between front legs. Abdomen with small remote punctures and hairs which are denser towards apex. Legs of equal shortness, and with shallow, dilated punctures and uniform very short hairs. Elytra more yellowish-brown, dilated at the lower sides anteriorly, and with about nine deeply punctured striæ, the striæ themselves sometimes obsolete, more or less covered with coarse and short pale yellow hairs which form by their greater density three more or less conspicuous transverse bands, the first of which is at the base; between *the second and third band, in the middle of the elytron, is a smooth dark-brown or black spot, with a less distinct spot of the same color below the third, and a still less distinct one above the second band. Length, 0. 3 inch. Described from four specimens bred from strawberry-boring larvæ. The black spots on the elytra are quite distinct* and conspicuous on two specimens, less so on one, and entirely obsolete on the other." To this description I may add the interesting and important fact that the wings of this beetle are very rudimentary, and wholly useless for flight.

Larva -White, except the head, which is pale-yellow. The mandibles are dark-brown, black at the edges, and bifid at the tip. The labrum is narrowed from behind, broadly rounded, entire and bristly in front, marked by a transverse suture in front of the middle. The antennæ, situated outside the upper angles of the mandibles, are one-jointed, and excessively minute, being about .02 mm. in length. Just outside each antenna is a black, ocellus-like spot, in full-grown larvæ, wanting in smaller individuals. The head is smooth, except for about three transverse rows of slender hairs. The body is strongly arched, like that of a Lamellicorn, each segment bearing a single row of very short, sparse hairs. The first segment of the dorsum is smooth; the remaining segments are divided into three transverse lobes, or folds, the first and last of which are interrupted by oblique grooves. Below the spiracles is a row of large, low, triangular tubercles, and beneath these a second row, separated from the former by a longitudinal channel. The ventral segments of the abdomen have the usual form of a single transverse ridge, a triangular portion of each end of which is marked off by an oblique groove. The structure of the segments is in fact almost precisely that of the strawberry root-worm, to be hereafter described. The pectoral ridges of the thorax, however, bear upon each side three large, fleshy tubercles, each with two or three stiff hairs at the tip. This larva, when stretched out, is one-fifth of an inch in length by one-half that width.

Pupa.—The pupa is white throughout, with the exception of the eyes, which show through the pupal envelope, at the base of the snout. The head and snout are bent against the breast, the latter about twice as long as wide, broadening towards the tip, where it is widely emarginate. The clubbed antennæ extend scarcely beyond the tip of the snout. The middle of the head bears two longitudinal rows of stiff bristles, four or five in each row, and three rows of similar bristles extend transversely upon the thorax, while others surround the margin. The posterior edge of each abdominal segment is likewise bristled, and a pair of incurved hooks terminate the abdomen.

LIFE HISTORY.

Early in August I received a letter from Mr. F. S. Earle, of Cobden, saying: "I send you to-day a box containing specimens of the strawberry crown-borer, and some other insects that are working on strawberries. Some years ago the crown-borer was very destructive here and at Anna, but for five or six years we have heard very little about it. Chancing to find a few of them in some plants in the garden, the other day, set me to looking about in the neighboring fields. I find some spots, particularly in old patches, where they are pretty bad. In a small field of Mr. Goodrich's I should think three-fourths of the plants were affected, and they are dying very fast. In most of the fields examined I found no trace of them, but I fear there is danger of their spreading from these infected areas and becoming generally destructive again. It is certainly a question of great practical importance, to know whether it is likely to spread rapidly in the near future, or whether its natural enemies —whatever they may be- - are likely to keep it within its present bounds. If you can spare the time, I wish you would come down and investigate this fellow. In the old fields the beetles have mostly left the plants, but in new-set fields I find the insect, in almost all stages of development. As we have eighty-five acres in strawberries, we are naturally a good deal interested in these matters."

In consequence of this request, I sent one of my assistants, Mr. W. H. Garman, to Southern Illinois, with instructions to give the whole subject of insect injuries to the strawberry as thorough an examination as the season would permit.

He visited various beds at Cobden, some old and some recently planted; examined carefully the large field of Mr. Earle, at Anna, and several plantations at Villa Ridge, giving special attention to that of Mr. G. W. Endicott. On his return, he stopped at Centralia and searched the plants in the fields of Mr. Webster and Mr. Brunton. ' He was in Cobden on the 10th of September, at Anna on the 16th, and at Centralia on the 23d. In every old bed examined, he found the borer present, and often very destructive. Throughout this whole visit, larvæ, pupæ and adult beetles were found in the infested beds; many of the latter still pale, having evidently recently transformed from the pupa state.

The worst fields were a small one on Mr. Endicott's place, at Villa Ridge, and one on Mr. Brunton's, at Centralia, both of which had been in strawberries for many years, but had lately been abandoned on account of the insect injuries. The new fields of young plants likewise contained the borer, some more, some fewer, but those most infested were in immediate proximity to old patches or near seedling plants which were found to contain the grubs. Even crowns which had taken root this summer from plants set new last spring, occasionally, but rarely, contained them. The fields examined were of about all the varieties now raised in Southern Illinois. All seemed equally liable to attack, and many of the plants were killed in the worst affected beds.

I desire to call special attention to the fact that, as late as the 23d of September, he found the borer present in *all* stages of larva, pupa and beetle, in the fields of Mr. Brunton and Mr. Webster, at Centralia. He brought back from the South a number of the plants with the borers still in their crowns, and transplanted them to boxes of earth, where they were kept for further developments.

When these plants were examined, a month later, it was found that the beetles had all transformed and emerged, eating outward at the side of the crown, and were then dead on the ground in the boxes. A letter from Mr. F. S. Earle, received about the same time, gave similar information respecting the plants in the field, in the following terms:

"I examined to-day [October 2] fifteen or twenty strawberry plants that had been infested by the crown-borer. I found them all deserted, the insects having escaped by a small hole in the side of the crown of the plant, usually not far below the surface of the ground. This coincides with my former observations, and seems to show that the borer does not winter in the crowns. More than half of the plants examined were still alive, but they were feeble, and lacked vigor."

Early in November I visited the same fields myself, and made a protracted search, in every way I could devise, for eggs, beetles and larvæ, both in and about the plants, under rubbish, and on the ground. The borers had all left the plants, not one being found in any stage in the hundreds of crowns examined. Among the insects collected at Villa Ridge, a single crown-borer beetle was found, apparently obtained by sweeping, and at any rate occurring on the surface, outside the plant. I sent from here to the laboratory, at Normal, a lot of the plants, to be searched for eggs. On those sent from Centralia, my assistant failed to find any eggs whatever, but as the roots were washed to free them from dirt before examining them, it is possible that the eggs were lost in this way. The plants from Villa Ridge were sent to Mr. Garman, with instructions to set part of them out for observation, and to examine a part for eggs. In searching thirty plants he found ten eggs, all exactly alike, and all placed between the bases of the leaves, where the eggs of the crown-borer would be expected to occur. Five of these eggs were on young plants, and five on old. They were large for the eggs of this beetle, and probably belonged to some other insect.

On the other hand, out of a package of plants sent by Mr. Brunton late in December, taken from his worst field, about fifty specimens were very closely searched, without discovering any of these eggs.

In compliance with my request, Mr. Brunton very kindly took the trouble to send me by freight, November 29, two grain sacks of earth from his field, one taken from the border of the enclosure under a hedge, where great numbers of insects were hibernating, and the other containing plants and dirt together, as dug up from the middle of the field.

These were carefully worked down through a set of wire sieves of various degrees of coarseness, from one-half inch to one-twentieth inch mesh, used in assorting the contents of the dredge in aquatic collecting. The earth and plants were placed on the upper seives, and the dirt washed through and away with a hose, leaving the other material assorted according to size. This was then dried and carefully looked over, bit by bit, so that not even the smallest insect escaped us. By this method, we were absolutely sure of securing all the beetles concealed in the earth. As a result of this search, so conducted, four active crown-borer beetles were found. We thus have proof positive that the beetle hibernates in the field, at least in part.

The following letter, from Mr. Brunton, dated November 23, will be of interest in this connection:

"I feel confident that no eggs of the crown-borer are to be found in plants here, at this season of the year, and I have no hesitation in saying that the crown-borers are not disseminated by plants removed from here up to April 1, unless the beetles are in the earth adhering to the plants."

Mr. Brunton, Mr. Endicott and Mr. Earle are all agreed that they never see the larvæ in spring before fruiting time, nor, in fact, until they work the fields after the berries are picked.

Mr. Endicott, of Villa Ridge, a large strawberry grower of several years' experience, and a very close and intelligent observer, says that he has never noticed the worms in the roots before June, but that he sometimes finds them when hoeing the plants after the berries are picked. At this time the larvæ have but just commenced to eat, forming little cavities at the bases of the leaf stalks. He believes that he would have been almost certain to see the borers if they had occurred in the crowns before April, as the time of transplanting extends from February to that month. He has never noticed the adult beetle except in the fall, and is confident that it is single-brooded.

The delay in printing this report enables me to add a few facts relating to the spring history of this insect, obtained by my assistant, Mr. F. M. Webster, on a trip made to Southern Illinois in April, 1883. On the 10th of that month, at Centralia, in pulling away the interwoven runners in old fields, or drawing off the mulch which had not yet been removed, he found quite a number of the adult beetles on the surface of the ground near the plants, but saw no indication whatever that they had yet deposited their eggs. On the 12th instant, at Cobden, two specimens taken upon the ground copulated while under observation. On the following day a number of others were found here, and on the 17th they were seen sparingly in the strawberry fields at Villa Ridge, in some cases upon the foliage of the plants. A careful examination of a considerable number of the plants taken from the worst infested fields failed to discover anything resembling the eggs of Tyloderma, and the examination of a large number of crowns discovered none of the larvæ in any condition.

Taking all these data into consideration, the following life history will doubtless be found nearly if not precisely correct. The adult beetle emerges from the crown all the way from July to October, this transformation covering a period of about two months, but all finally emerging before cold weather. It is barely possible that some of the earliest of these lay their eggs upon the plants in the fall, at least in late seasons, but most, if not all, winter over as beetles, and do not deposit their eggs until the following spring. The eggs are placed upon the side of the crown between the bases of the leaves. As soon as the larvæ hatch they eat their way into the crown, and remain there excavating its substance, until they pupate. All the transformations are passed in the crown, and from this the beetle emerges as a perfect insect.

The fact that in fields newly set in the spring, young plants rooting from runners the same season are sometimes found infested by borers in the fall, can only be accounted for on the supposition that some of the beetles which have hibernated, are conveyed to the new field on the plants or in the earth about their roots. It will perhaps be objected that these new fields may be infested from a distance, notwithstanding the well-known sluggishness of the adult, by beetles which take wing. This hypothesis is at once disposed of, however, by a fact curiously simple and of easy observation, but which has hitherto escaped attention, and which at the same time accounts for the slow spread of the pest, viz: that the beetle is practically wingless, and incapable of flight.

There can scarcely be a shadow of doubt remaining that this species is single-brooded, since it has now been traced throughout the entire period from the first of August to the first of May, occurring in the beetle stage during these nine months, and leaving but a period of three months for the hatching and development of the earliest larvæ to the adult condition.

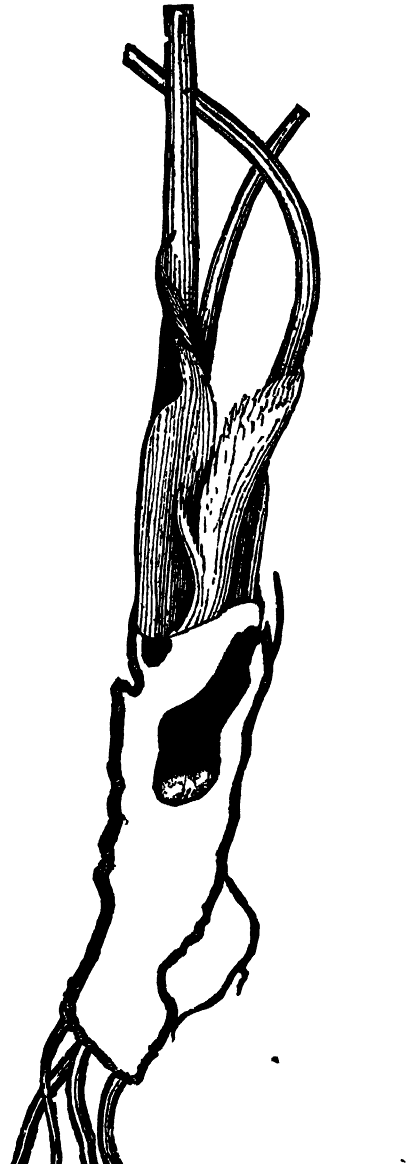

Fig. 8. Work of Strawberry Crown-borer (*Tyloderma fragariæ*, Riley.) Vertical section of the crown, showing the entire work of one borer. The larva has acquired its growth, and completed its transformations, and the newly hatched beetle is shown at the bottom of the burrow.

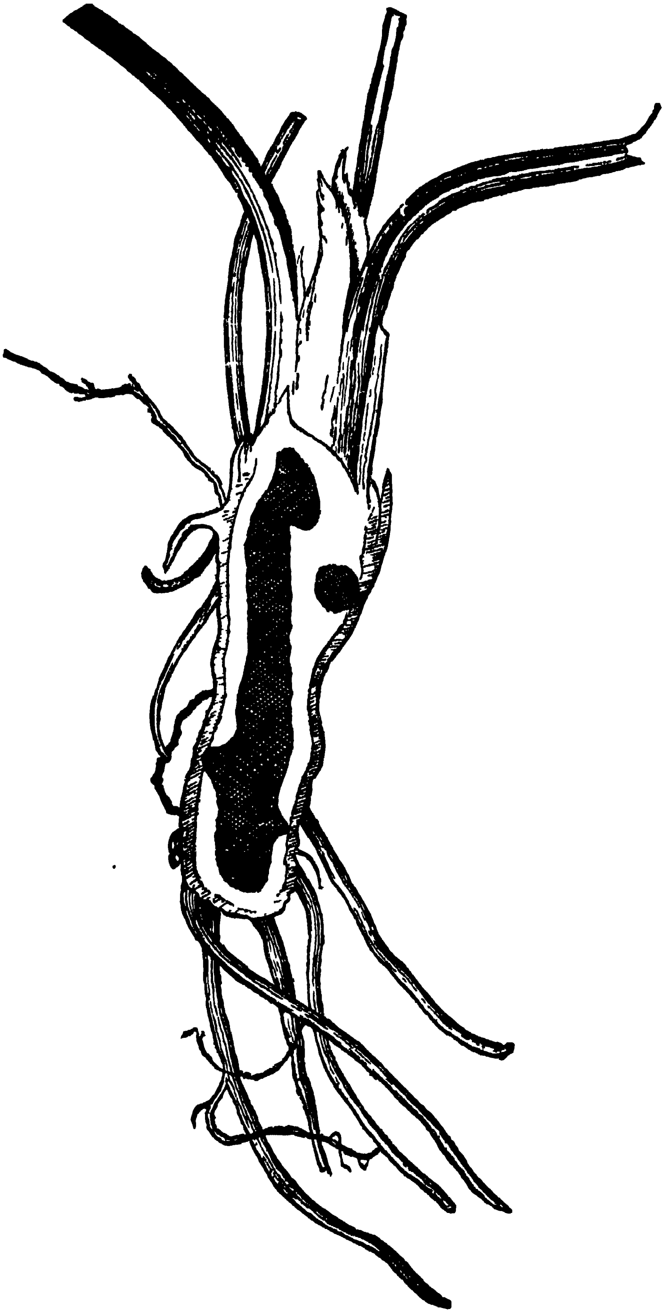

Fig. 9. Work of Strawberry Crown-borer, (*Tyloderma fragariæ*, Riley.) Crown fully excavated by more than one borer.

INJURIES TO VEGETATION.

The mischief done by the crown-borer is too well known to require special description here. There is usually about one insect to a crown, though occasionally two or three will be found. These finally excavate the whole interior, leaving only the shell or epidermis. The growth is of course completely checked, and the plant frequently dies, and badly infested plantations are speedily ruined. A single year of the work of the borer is, under ordinary circumstances, enough to destroy the field. It is not unfrequently the case, however, that the plant attacked will defend itself by putting out a new crown, either from the side or the top of the old one, from which fresh roots strike forth, giving the strawberry a new lease of life. This crown, of course, will be invaded in the following season by the borer; but the plant, if vigorous, may even form another crown, and so on, for three or four years successively. Mr. Garman's observations show that this process has occurred, apparently with little injury to the strawberry plant, where the rows have been hilled up, either through accident or design. Even in low places in the field, where the earth has washed down about them, the fresh crowns are strong and vigorous, and the plants apparently as healthy as if they had not been attacked. Some varieties of the strawberry resist the attacks of the borer much better than others; the Wilson being one of the readiest to succumb, the Captain Jack and the Crescent among the hardiest.

NATURAL ENEMIES.

Mr. Garman found two parasitic grubs in the cavity of the crown excavated by the borer, each lying in contact with a larva which was very feeble, and in fact almost dead. These grubs were unfortunately lost in transit, and I can only surmise that they were sucking the juices of the borer.

These are the only possible insect enemies of the pest which have yet been observed.

METHODS OF PREVENTION AND REMEDY.

When we come to discuss methods of prevention, we see the importance of a correct knowledge of the life history of this species.

These are the questions of practical interest, answers to which the strawberry farmer requires: First, can the borer be destroyed in the field without sacrificing the plants? Second, when, if at all, can young plants be taken from an infested field, which shall themselves be free from the borer in any stage, and which can consequently be used in establishing new plantations without fear of transporting the insect? Third, at what season of the year should infested plants be plowed up and destroyed, with a view to exterminating plant and pest together? Fourth, can its spread from one field to another be in any way prevented?

First, can the beetle be killed in the field? There is no longer any question that the adult insect is abroad during the months of August and September, and also in early spring. As it certainly does not leave the field, it must feed during the period of its active life above ground, upon the tissues of the strawberry plant itself. It has, like other beetles, a biting mouth, and there is, therefore, a certain probability that its numbers could be reduced by the application of Paris green or London purple to the vines in autumn, possibly also in early spring, before the plants commence to bloom.

The answer to the second question, when may young plants be taken from an infested field with security that they will be free from the eggs, depends, of course, upon the exact time of oviposition. As there remains a slight possibility that a few of the eggs are sometimes laid in fall, it is not absolutely certain that stools forming after July will be wholly free from them; but in all probability this will be the case. On the other hand, there is very little likelihood that the hibernating beetles usually commence the deposition of eggs before April, and consequently plants taken up before this month will be fairly likely to be free from them, but it is safest to insist upon transplanting as early as is at all practicable. ' Every day's postponement after the opening of spring invites insects forth, will incur additional risk of infection. It goes without saying, that by far the most judicious course is to obtain plants for setting from fields that have not been previously troubled by this insect.

At whatever time the eggs are laid, the answer to the third question must be substantially the same. To destroy the borer, the infested fields should be plowed up as soon as possible after the fruit is harvested. However, if the ground is to be planted to another crop, it would probably make little difference when the plowing was done, unless other strawberry plantations were near at hand. The sluggish and wingless beetle would doubtless perish in the field, even if it were present in full adult activity.

To prevent the 'spread of the pest to newly set grounds, I know of no method but that of isolation. The fact previously mentioned that the beetle is extremely sluggish and without the power of flight, not only explains the slow spread of the pest from one part of the field to another, but also gives a hint of the distance and kind of obstruction necessary to prevent its passage from field to field. It is certainly unlikely that it could make its way unassisted over a space of more than twelve or fifteen rods; probably a street or a dusty road would be a fairly effectual barrier to its progress, unless it was conveyed across by men or animals through carelessness or accident.

Perhaps a division of the strawberry field into parallel belts, separated from each other by areas devoted to some other crop, would prevent communication of this insect from one belt to another, if the intervening spaces were a few rods wide.

The only method which has yet been *proven* effective to *prevent* the ravages of the crown-borer is that of frequent rotation of crops, together with the planting of new fields at a distance from the old. This method has been applied with conspicuous success by Mr. Endicott, at Villa Ridge, and an outline of his procedure is commended to general attention. In making a new plantation, he selects in spring the newest and strongest plants, sets these as usual, at a distance from any other field, leaves them until their runners have taken root, and then digs up and destroys those first set. His new field is then stocked with fresh plants, which have never been in contact with seriously infested crowns. Too much care can not be taken to free the plants from dirt, in which the beetle might possibly be hibernating, and to shake and search them for specimens hiding in the foliage and the rubbish about the crowns. It is a very unusual thing to find a borer in any of these plants during the first or second year; not one in fifty thousand plants, according to Mr. Endicott's estimate.

It is a general practice throughout the strawberry region to plow up a field after two crops have been taken from it, planting the ground for a season to some other crop, usually to corn. These two methods will probably serve to keep the crown-borer well in hand. I do not think the process of ridging or hilling up the plants has been tried in Southern Illinois, although I have been told that it is a favorite practice east. There, however, the crown-borer is not yet known to occur.

In short, unless experiments should prove the worth of poisons, applied in fall or early spring, the main reliance must be placed upon occasional rotation, and the planting of new fields at a little distance from the old, under conditions to make the transfer of the pest impossible.

Perhaps the plan of ridging or hilling up the plants will be found useful in some instances.

In conclusion, I will only add that we should bear in mind the fact that the injuries done by the crown-borer are really much less serious than has been generally supposed, for the reason that it has been confounded by horticulturists with other equally destructive but very different insects, the strawberry root-worms.

From these, however, it may be easily distinguished, notwithstanding its close superficial resemblance, by the fact that it is altogether footless, while the root-worms all have three pairs of distinct jointed legs on the segments next following the head.

THE STRAWBERRY CROWN MINER.

(*Anarsia lineatella,* Zeller.)

(Order LEPIDOPTERA. Family TINEIDÆ.)

[A slender reddish caterpillar, about two-fifths of an inch long, with the head and the top of the first segment smooth and brownish-yellow, found excavating the crowns of strawberries and boring the twigs and fruit of peaches.]

It is not all of the function of the physician to cure disease, however deadly. If he does his whole duty to those whose health is under his charge, he will watch for the approaches of disorder, and give early warning and advice. So the economic entomologist will find it profitable to scan the entomological field for such insects as are likely to become injurious if conditions specially favor their development. A timely word of caution might, for example, have saved us the ravages of the crown-borer, as this insect is doubtless a native of Illinois, finding its natural home in the wild strawberry plants.

I have now to report the occurrence, in this State, of an insect capable of injuries as serious as those of the species just described, and like that infesting the crowns of the strawberry, but as yet not known to have done any serious harm here in cultivated fields. We shall see, however, that it has elsewhere demonstrated both its disposition and its ability to work great mischief, and that it is well worth the serious attention of the strawberry grower. If it fairly gets a lodgment in our fields, it will apparently be very difficult to control, for the adult insect has the power of flight, and cannot be as easily headed off as the crown-borer; and on the other hand, it has a suctorial mouth, and could not be poisoned like the beetle of the root-worm. This insect, which I propose to call the *crown miner,* is said by Prof. Riley to be the larva of a moth of the family Tineidæ, long known to science under the name of *Anarsia lineatella,* (Zeller). This species occurs in Europe, as well as in this country from Canada to Washington and west to Illinois.

The method of its mischief is very similar to that of the crown-borer, as it bores in from the side and works downward, frequently to the tip of the crown. Unlike the borer, it is an active insect, and keeps its burrow free from excrement, with which that of the other is always packed. When its retreat is opened, the caterpillar creeps readily backwards and forwards, or lets itself drop to the ground by a thread.

This species, or one which has not hitherto been distinguished from it, occurs also in peach twigs, as first shown by Mr. Glover, and afterwards by Profs. Riley, Comstock, and others; but some of the facts make it doubtful whether the peach twig borer and the strawberry crown-miner are really identical. I shall treat of it here under both heads, however, and will give first the facts relating to its injuries to the peach, following with an account of its work in strawberry fields.

AS A PEACH TWIG BORER.

The first mention of this species in the United States of which I have any knowledge, was made in 1860, in a paper on the Lepidoptera by Dr. Brackenridge Clemens, published in the fifth volume of the Proceedings of the Academy of Natural Sciences of Philadelphia. On page 169 of that volume, Dr. Clemens describes it as a new species, supposing it to be distinct from the European species which had been previously described by Zeller. A larva was taken by Dr. Clemens, full-grown and about to transform on the limb of a plum tree; but he discovered nothing of its habits.

The next notice of it occurs in the report of Townend Glover, Entomologist to the Department of Agriculture, for the year 1872, and published on the 112th page of the report of the Department for that year.

"In examining peach orchards in the neighborhood of the Maryland Agricultural College, about the first week of May, almost all the young twigs of the trees were observed to be killed at the extreme point or end, for a distance of one to one and one-half inches, and the terminal bud entirely destroyed. On cutting open these dying twigs, the injury was found to be caused by a very minute caterpillar, which, entering the twig near a bud, had entirely eaten out the pith and interior, leaving only its "frass" and the exuding gum to mark the spot where it had entered. When confined in a glass case, after about a couple of weeks several of the larvæ left the injured twigs and formed very loose cocoons on the sides of the box or among the rubbish and old leaves lying scattered on the earth, and in about six to ten days, the perfect moth appeared. Specimens were forwarded to Mr. V. T. Chambers, of Covington, Kentucky, who is making a special study of our micro-lepidoptera, and he decided it to be *Anarsia* (Zeller) *pruinella* (Clemens), probably *A. lineatella* (Zeller), of Europe, the larva of which was described by Mr. Clemens as taken June 16, full-grown, and about to transform on the limbs of a plum, but no food-plant is mentioned. The tail of the pupa is attached to a little button of silk, in an exceedingly light cocoon. There was scarcely a single young tree in the peach orchard examined that was not more or less injured by this little pest, and at least as many as twenty to fifty injured twigs were found on some very young trees. After the insect leaves the twig, the injured part dries up and breaks off. This insect was also seen, though in much smaller number, last season, in Maryland and Virginia, and apple trees are also frequently observed injured in a similar manner in Maryland, and it is probable that the damage is done by the same worm, but as we have not yet succeeded in breeding them from the apple, we cannot say with certainty.

The larvæ are about 0.25 of an inch in length, head black, body dark reddish-brown, with lighter rings, the third ring being more conspicuous and whitish; the moth is quite small, and measures 0.40 to 0.60 of an inch in expanse of wings, and is a pale gray color, with a few blackish spots on the upper wings. Should this insect increase in numbers as much during the next year as it has done since the last, it threatens to be a great scourge to peach growers. The only way to destroy them is to go around the peach orchard in May and June and cut off such terminal shoots as appear to be withering or drying up, and then burn them with the caterpillar inside. This, at least, would prevent their multiplying to such an extent as to be very injurious at present. When not so very numerous, they appear only to serve to somewhat prune the trees, as they take off merely the tips of the branches."

Prof. J. H. Comstock, formerly Entomologist to the United States Department of Agriculture, adds an item to the account of its injuries and also contributes to its life history, in his report for 1879, published in the report of the Commissioner of Agriculture for that year. He says of it:

"This insect has long been known as a serious pest in peach orchards, destroying the terminal twigs of the trees. The young caterpillar begins its work in the spring, at the time, or soon after, the shoots begin to grow. These, when from one-half inch to one inch in length, are punctured at the base, and are eaten off completely. The leaves of the bud unfold and then wither. The twig, although severed, does not drop off, but is held in place by the gummy substance which exudes from the wound. Occasionally, all the twigs on a tree are thus destroyed. This insect has also been found, by Mr. Wm. Saunders, boring into the crown and roots of strawberries in Ontario. And during the past summer I found the peculiar reddish larvæ in peaches which were grown on Blackstone Island, Virginia. A search revealed them also in peaches on the department grounds. The larva leaves the peach before transforming, and suspends itself to the outside of the fruit, spinning no cocoon at all. The twig-inhabiting individuals mature in this latitude during May and June. The fruit-inhabiting larvæ are found during the latter part of July and in August, and mature during September. It thus appears that the species is two-brooded, the early brood feeding in the terminal twigs and buds, while the later brood inhabits the fruit. As a remedy, the trees should be examined early in May, and all dying twigs pruned and burned; thus destroying the larvæ. An interesting chalcid parasite has been bred from this insect, which we have not had time to describe and name for this report."

Mr. J. Pettit, of Grimsby, Ontario, has bred it from the twigs of the peach, and it breeds from peach twigs also in Europe; and Mr. Glover has found it feeding on the buds of the peach.

The following description of the moth is taken from insects bred from the peach, and may possibly not apply exactly to those from the strawberry. It is from the paper of Dr. Clemens already cited:

"Fore wings of the moth ovate-lanceolate, with an *opaque space* on the costa, towards the end of the costal nervure and the first subcosto-marginal branch. Discoidal cell rather narrow, closed by a short nervure. The subcostal sends four branches to the costa, the first from a point rather behind the middle of the wing, much separated from the second, and the last *furcate* on the costa before the tip, and a simple branch beneath the latter to inner margin just beneath the tip of the wing. The median subdivides into four branches, rather approximated at their origins, the medio-posterior branch being nearly opposite to the second marginal. Subcostal furcate at the base. Hind wings trapezoidal, costa retuse, slightly emarginate beneath the tip, hind margin obliquely rounded; broader than the fore wings. Subcostal nervure rather attenuated toward the base, with a faintly formed intercostal cell, furcate. Discoidal cell broad, closed, with a nervule given off to the hind margin. Median three-branched, medio-posterior branch distant from the others.

Head smooth, covered thickly with decumbent scales. Forehead broad, almost spherical; ocelli none. Eyes rounded, moderately prominent. Labial palpi, *second joint thick, with a very abundant tuft of hair beneath prolonged in front*; third joint *smooth, slender and pointed*, as long as the second. Maxillary palpi, *short and distinct*. Antennæ simple, scarcely more than one-half as long as the fore-wings, slightly denticulated, basal joint smooth. Tongue scaled at the base, about as long as the labial palpi.

Head and face pale gray; thorax dark gray. Labial palpi dark fuscous externally and pale gray at the end; terminal joint gray, dusted with dark fuscous. Antennæ grayish, annulated with dark brown. Fore wings gray, dusted with blackish brown, with a few blackish brown spots along the costæ, the largest in the middle, and short blackish brown streaks on the median nervure, subcostal, in the fold, and one or two at the tip of the wing; cilia fuscous gray. Hind wings fuscous gray; cilia gray, tinted with yellowish."

Concerning the larva of this twig-borer, Prof. Riley says* that when young it is paler, with a paler head, the body being yellow, each joint with a crimson band superiorly, narrow on the thoracic joints, and broad and divided transversely by a fine pale line on the feet.

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*Proceedings Ontario Society, 1882, p. 17

AS A STRAWBERRY CROWN MINER.

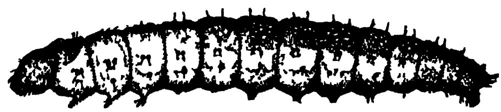

Fig. 10. Strawberry Crown Miner. (*Anarsia lineatella*, Zeller). Larva from crown of strawberry plant. Magnified 9 diameters.

On the 8th of June of 1869, Mr. Wm. Saunders, of Ontario, Canada, found this larva boring the crowns of strawberry plants in his vicinity. One field mentioned by him was almost destroyed by this pest and the leaf-roller together. Mr. Saunders' account of this species and of its injuries to the strawberry, (published in the report of the Ontario Entomological Society for 1872), is so excellent that I cannot do better than to reprint the substance of it here:

"This is a very troublesome insect where it occurs plentifully, and takes a liking to the strawberry; but, happily, this is not often the case. We have never seen it affecting this fruit anywhere excepting on the grounds of Mr. Luke Bishop, of St. Thomas, Ontario, who first called our attention to it about the middle of May, 1869, when he brought us a few specimens. During 1868 and 1869, they played sad havoc with his plants, destroying a large proportion of them. We believe they have been less troublesome since. The borer is a small grub or caterpillar, nearly half an inch long and of a reddish color, which eats irregular channels in various directions through the crown and larger roots of the plant, causing it either to wither and die, or else to send up weakened and almost barren shoots."

The following description of this larva was taken on the 20th of May, 1869:

Length, 42 inch. Head rather small, flattened, bilobed, pale brownish-yellow, darker in color about the mouth, and with a dark brown dot on each side.

The body above is semi-transparent, of a reddish pink color, fading into dull yellow on the second and third segments; anterior portion of second segment smooth and horny-looking, and similar in color to head. On each segment are a few shining reddish dots—yellowish on the anterior segments—or faintly elevated tubercles, from each of which arises a single very fine short yellowish hair, invisible without a magnifying power. These dots are arranged in imperfect rows, a single one across the third, fourth and terminal segments, and a more or less perfect double row on the remaining segments. The under surface is of a dull whitish color, becoming faintly reddish on the hinder segments, with a few shining dots; those on the fifth, sixth, eleventh, and twelfth segments being arranged in transverse rows, in continuation of those above. Feet and prolegs yellowish white, the former faintly tipped with dark brown. It spins a slight silken thread, by means of which it can suspend itself for a time at a short distance from its place of attachment. The specimen described produced the moth on the 8th of July following.

On the 8th of June, we visited the grounds of Mr. Bishop, and found his strawberry beds badly infested—indeed, almost destroyed—by this pest, along with a leaf-roller, to be presently described. The borer eats irregular channels through the crown, sometimes excavating large chambers, at other times merely girdling it in various directions, here and there eating its way to the surface. Whether these chambers and channels are due to the presence of more worms than one in a single root, we were unable to determine with certainty. Most of the cavities contained a moderate-sized, soft, silky case, which, when opened, appeared nearly full of exuviæ. These cases had served as a place of retreat during winter. Most of the larvæ found at this date had eaten their way to the upper part of the crown of the plant, just under the surface, and were found about the center, with a hole eaten through the surface. From the fact that a large number of roots were examined, and although almost every one was more or less injured, but very few larvæ were to be found, we inferred that the probabilities were that the larvæ, when mature, usually leave the root, and undergo the change to chrysalis, either under the surface of the ground or amongst rubbish at the surface. One chrysalis only was found, and that was in the cavity of a root. As soon as Mr. Bishop had discovered the destructive character of this pest, he, with commendable caution, refused to sell any more plants until the insect was subdued, for fear of spreading the evil. He is of opinion that the insect came to him from some part of the United States, with some plants of the Hooker strawberry, as it was in a patch of these so obtained, that he first noticed the insect working.

Specimens of the larvæ gotten late in the season wintered over, and were examined on the 12th of January following, when they did not appear so plump in body as those examined in July. They appear to spend most of the winter in a torpid state within the silken cases before mentioned. Several were found thus sheltered at this time, and one, whose original abode had been disturbed in the fall, had prepared for itself a similar casing within the fold of a strawberry leaf. In this latter instance the larva seemed quite active, moving itself briskly about whenever touched. The chrysalis of the insect is very small, and of the usual dark reddish-brown color. That one which was found on the 8th of June produced the moth on the 12th of July."

This crown miner was found by one of my assistants, Mr. W. H. Garman, at Normal, September 27, abundantly infesting the crowns of wild strawberry plants which he was searching for crown-borers and other injurious insects. A number of these plants transferred to the laboratory for observation, are still alive in good condition, and contain the living larvæ.

We shall, therefore, probably be able to complete the life history of the insect next year, with respect to the particulars which remain yet unknown.

Remedies.

It is evident that wild and seedling plants should be destroyed whenever possible, since they furnish a perfect harborage and breeding ground for these and other insects, and do no sort of good. If this insect once gains a foothold in the field, it will apparently be impossible to dislodge it, except by destroying the plants; and this, to be effective, should be done late in summer or early in fall. It is probable that even this expedient, however, will be inefficient, if the larva breeds in peach trees as well as in the strawberry; and unless it were exterminated in both at once, it would be likely soon to spread again from one to the other.

Strawberry growers are earnestly advised to search their fields in spring and fall for evidence of the occurrence of this crown miner; and especially to look after the wild and runaway plants in fence corners and by roadsides. These plants are, at best, superior breeding places for strawberry pests, living, as they do year after year, without "rotation;" and it is doubtless careless farming to permit them to remain.

THE MELON PLANT-LOUSE.

(*Aphis cucumeris*, n. sp.)

Order HEMIPTERA. Family APHIDIDÆ.

[A minute, very sluggish, green or greenish-black insect, occurring in immense numbers from spring to late summer upon the under sides of the leaves and also upon the roots of muskmelons, watermelons, cucumbers, squashes, and other cucurbitaceous plants, causing the leaves to curl and shrivel and lose their color, and greatly hindering the development of the plant.]

This plant-louse, coming from no one knows where, has done, during the last two years, widespread mischief to the plants which it attacks. It was first noticed in the Farmers' Review for September 2, 1880, by Dr. Cyrus Thomas, then State Entomologist of Illinois, who says :

"There has been great complaint among our gardeners this season in reference to a plant-louse that is doing much injury to the nutmeg and muskmelon vines, and also to the cucumber vines. In some instances they have almost entirely destroyed entire fields of vines."

He does not say definitely to what part of the State his remarks have reference, but implies in another part of the article that he is writing of Southern Illinois.

In 1881, at Marengo, in Northern Illinois, where large fields of cucumbers are raised for the supply of a pickle factory, this louse occurred in great numbers, but disappeared before the end of the season without doing any grave injury. It also appeared in numbers sufficient to attract attention upon muskmelons and watermelons in Central Illinois. Early in the spring of 1882 it made an overwhelming attack in many localities upon both watermelons and muskmelons. In a garden at Normal, for example, it appeared upon the vines when they had run about six or seven feet, soon literally covering and killing them, (the striped cucumber-beetle assisting to some extent in this work), and the ground was plowed up and planted to another crop. About the 1st of July it again attracted attention in large fields of cucumbers at Normal, spreading rapidly and arresting the growth of the worst infested plants. Where muskmelons and cucumbers grew together, the latter were comparatively little injured, but the melons were sometimes almost completely destroyed, the yield amounting in some cases to less than five per cent. of the crop; in fact, many of the hills in these fields did not run at all, but were less than a foot across in September. The leaves were then small and curled, of an unhealthy look, the roots knotty and diseased, and only here and there a melon could be found. Even small garden patches of cucumbers, melons and squashes about Normal were vigorously attacked, and many of the vines were either killed or prevented from fruiting. Muskmelons were almost always most generally and seriously affected, cucumbers and watermelons next, and squashes least of all.

The mischief done by this insect elsewhere is indicated by the following extracts from my correspondence: Mr. O. B. Galusha writes me from Morris, Grundy county, under date of July 31: "My ten acres of melon vines are being swept with the 'besom of destruction' by the Aphides I send you. I have never known this insect on melon leaves before. It takes watermelons, muskmelons and squashes, though I think it prefers the melons to the squashes, and muskmelons to watermelons. They swarm in myriads, however, upon both species. What species of lice are these? If they would operate on the upper instead of the underside of the leaves they might be routed by dusting with lime (or ashes perhaps), but as they are out of harm's way in this respect I have not attempted to molest them. Other melon fields near by are similarly affected." On the 18th of September, in response to an inquiry as to the further history of the pest in his locality, Mr. Galusha writes: "I have received yours of the 15th, and am glad to say that the melon-lice disappeared suddenly—I think about August 1, and melons recuperated considerably afterward, especially the muskmelons. I had *begun* to plow up my two-acre patch of muskmelons—as there was very little fruit set, and the vines were almost destroyed; but could not plow on account of the soil being so hard and dry. In a few days the lice left, and I now have a good (or fair) show of melons on the patch, just beginning to ripen. The ground was in melons last year; *i. e.*, a portion of it, say one-third."

It was also reported on the 23d of September, by Prof. Edward G. Howe, of Chicago, as doing much damage to nutmeg melon vines and inclining to spread.

Previous mention of injury by plant lice to plants of this order has been made by Mr. Gentry, of Pennsylvania, who found an Aphis infesting the blossoms of a wild cucumber; by Buckton, of England, by whom a species of Aphis is said to infest the under sides of the leaves of melon plants in Great Britain; and by Miss Middleton, of this State, who describes a species in the Eighth Report with the remark that it was found upon the leaves of squashes. The specimens found at Normal were certainly different from the species described by Miss Middleton, belonging, in fact, to another genus, and are apparently quite distinct from the *Aphis cucurbitæ* of Buckton, as described and figured by that author in his "Monograph of British Aphides," volume 2, pages 56-57. A brief description of what is probably this species is given by Dr. Thomas in the newspaper article already cited, but without name, as he was inclined to believe that our insect was the *Aphis cucurbitæ* of Buckton. Considering this species as new, I therefore propose for it the name of *Aphis cucumeris.*

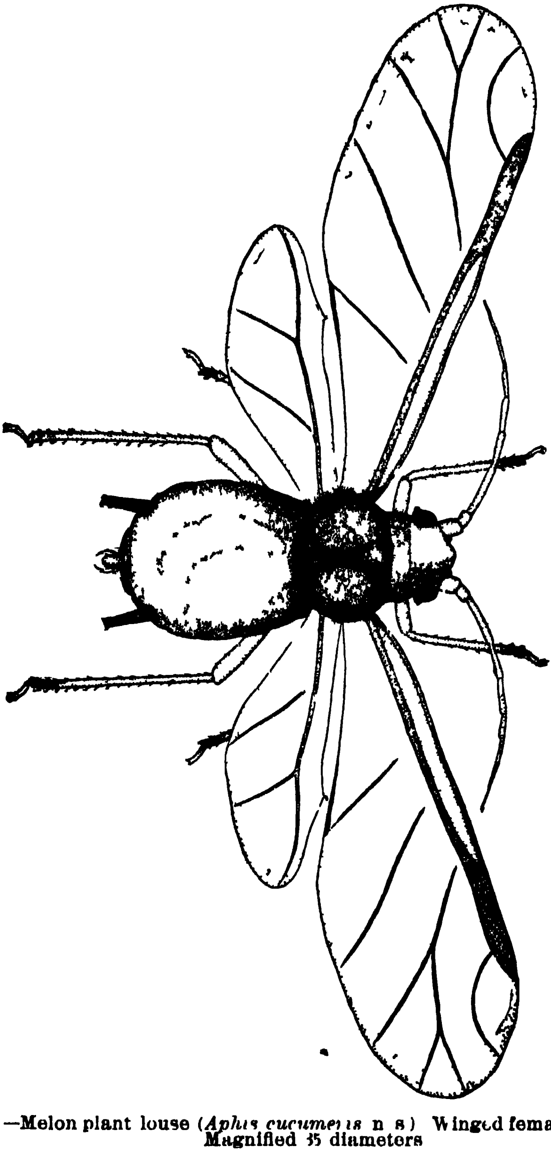

Fig. 11—Melon plant louse (*Aphis cucumeris* n. s.) Winged female (parasitized) Magnified 35 diameters

WINGED FEMALE.

Head black, with red or black eyes, the latter usually with a red tubercle behind. Thorax sometimes jet black throughout, sometimes with the prothorax yellowish. Abdomen yellowish-green with black edges, and with blackish margins to segments. Legs yellow, with coxæ, tarsi. and distal parts of tibiæ and femora dusky or black. Cornicles cylindrical, black, tail yellowish, rostrum yellow, with black tip. The antennæ are six-jointed, (apparently seven), the sixth with a setaceous tip three times as long as the basal part of the joint. The sixth joint is the longest, the third next, the fourth and fifth nearly equal. All except the basal joint are marked with imbricated transverse ridges. The wings are more than twice as long as the abdomen, hyaline, with stigma and veins dusky yellowish. The tail extends beyond the tip of the body. Width of thorax .022 inch, of abdomen .03 inch, of head .014 inch. Length of body .054 inch, of antennæ .052 inch, of cornicles .009 inch.

PUPA.

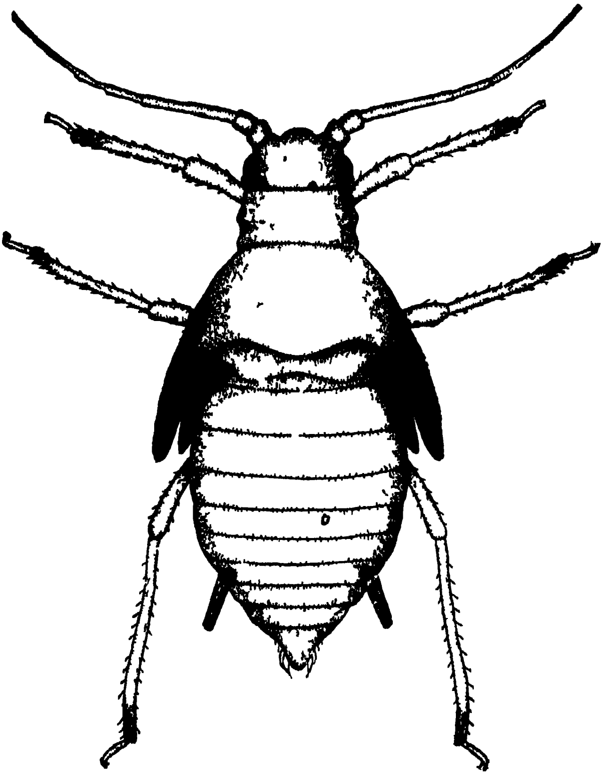

Fig. 12.—Melon plant-louse (*Aphis cucumeris*, n. s.) Pupa.

Head and prothorax, base and tip of antennæ dusky, eyes dark red, sides of mesothorax and metathorax white, wing pads black, abdomen brownish-yellow, except posteriorly, where it is green. Whole body pruinose, legs white, tarsi and tips of tibiæ black.

WINGLESS FEMALE.

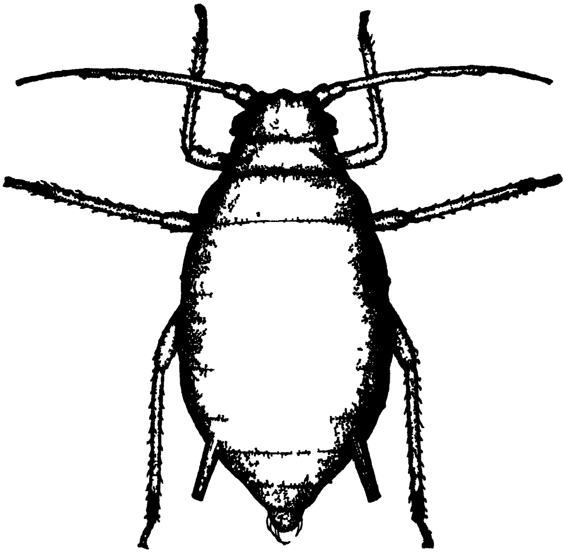

Fig 13—Melon plant-louse (*Aphis cucumeris*, n s) Wingless female magnified 40 diameters

Body green or greenish-black throughout, antennæ black at base and tip; cornicles black, tail yellowish, legs pale, with tarsi and tip of tibiæ black. Body broad ovate, widest behind, thorax without spine. Cornicles minutely roughened. Antennæ with imbricated transverse ridges, excepting the two basal joints. Body .06 inch long, .037 inch wide, antennæ .05 inch in length, cornicles .013 inch.

ROOT FORM.

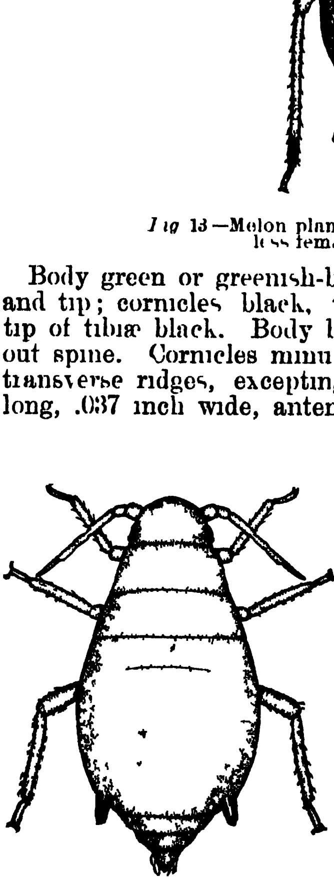

Fig 14—Melon plant-louse (*Aphis cucumeris* n s) Root form, magnified 40 diameters

Broad ovate, tapering and acuminate posteriorly, pale bluish green. Head, eyes, base and tip of antennæ, two basal and last joints of tarsi, tips of tibiæ and femora, and tip of cornicles, black; legs white. Beak very long, reaching to the third segment of the abdomen, tip blackish, mouth at and about the base of rostrum dusky. Antennæ short, reaching the base of the abdomen, five-jointed, and the fifth with a setaceous tip less than twice as long as the basal portion; third joint about equal to the fifth. Cornicles cylindrical, scarcely longer than the following segment of the abdomen. Thorax with a spine each side. A tubercle on each side of the first and sixth abdominal segments, visible only from behind, and a very small one on the metathorax, behind the prothoracic spine. Length, .05 inch; width, .03 inch; antennæ, .02 inch.

On cucumbers and muskmelons, from May to September, 1882.

LIFE HISTORY.

There is yet very much work to do on the life histories of the plant-lice, especially upon the subject of their fall and winter history. A few are known to hibernate as mature insects—the apple Aphis, for example—but most of the small number which have been followed through the year, lay their eggs in autumn and perish. The plant-lice hatching from these eggs are all wingless females, as far as known. With respect to the cucumber Aphis, there is no more certainty on this point than in any of the other species. I searched carefully for eggs and living plant-lice after the usual time of oviposition, but was unable to find either. This was doubtless due to the fact that the plant-lice in all the fields under our observation were almost completely exterminated by their parasites, long before the vines were killed by frost. An hour's search in September, in one of the fields that had been worst infested, discovered less than a score of living plant-lice at that time, although hundreds and thousands of their parasitized bodies still remained clinging to the leaves. If their eggs were left in these fields, they were of course far too few to be found by an indiscriminate search. I have but a single fact bearing in any way upon their winter history. Several observations made at Normal and elsewhere, indicate that fields which had been in cucumbers or some similar crop during the preceding year, were much the most generally and injuriously affected by this plant-louse. If this should prove to be the common rule, it would be fair to infer that the insect spends the winter upon the ground where it developed, either as adult or in the egg. Reference has already been made to the occurrence of a form upon the roots. This I saw only late in the season in one of the worst infested fields, where I made a thorough and protracted search with a view to determining whether the species had a root-form or not. Not over half a dozen specimens were found at that time, but these were unmistakably of the same species as those which occurred upon the leaves. From the general appearance of the roots of the infected plants, it is not impossible that much of the injury noticed was done earlier by the root-lice—perhaps more than by those appearing upon the foliage.

INJURIES TO VEGETATION.

The evidences of the injury done by these lice were of the usual kind. The leaves were curled and crumpled, with an unhealthy hue, and were much smaller than those not troubled by lice, and the entire plant was stunted, and evidently rendered thoroughly unhealthy. The roots were crooked and knotty, and destitute to a great extent of fibrous rootlets. After the disappearance of the lice in August, the affected plants recovered but slowly, although most finally put out new foliage, and yielded a part of a crop.

PREVENTION AND REMEDY.

The only preventive measure which I can suggest is based upon the probability that the plant-lice winter in the fields where they grow. Prudence would consequently dictate that the kinds of plants attacked by them should not be raised upon the same ground two years successively. It might suffice, however, to collect and burn the vines in the fall. If the eggs are deposited upon them, this would answer instead of a rotation of crops. The fact that the lice occur only on the lower surface of the leaves, which soon curl and wrinkle so as to protect them largely, made it very difficult to reach them with any of the applications usually made to insects of this class. Experiments were made, however, with substances in powder, with fluids, and with vapors.

The substances applied in powder were road dust and pyrethrum; the liquids were soapsuds and an emulsion of kerosene with milk; and the vapors were tobacco smoke and vapor of bisulphide of carbon.

Several applications of dust were carefully made by hand to the under side of the leaves. It did not adhere everywhere, but where it did, the lice disappeared. As an average result, it was finally concluded that from one-third to one-fourth of the insects were killed or driven away by a single dusting.

Powdered flowers of pyrethrum were dusted with the powder gun on the under side of several leaves, which were thickly covered with lice. These leaves were picked and placed in water for more careful observation. The powder was slow to act, not over five per cent. of the lice falling in an hour, but later nearly all fell. Most of these were still alive on the table after twenty hours, but they finally all died and dried up. Several other applications gave similar results.

Strong soapsuds was sprinkled on the under side of other leaves with little effect, although some of the lice were killed.

An emulsion of kerosene was made as follows: one pint of kerosene and two pints of milk were pumped back and forth with a syringe until a soft butter was formed, and this was diluted with ten times its volume of water. Thrown upon the leaves with a syringe, this killed about all it reached, and cleared many leaves entirely, while on others a few remained.

For the application of tobacco smoke, a common bee-smoker was obtained, filled with chunks of rotten wood mixed with cheap tobacco, and fired as is usual in smoking bees. An immense smudge was easily made in this way, and kept under complete control. After some successful experiments in the laboratory, the apparatus was taken to the field. Merely to blow the smoke against the lice, without confining it in any way, had no effect whatever. Large pieces of canvas (hay caps) were then obtained, and used to cover a section of a row. Under these the tobacco smoke was blown repeatedly one evening, keeping the space beneath well filled for the first five minutes, and then for ten minutes. On examination next morning, about ten per cent. of the lice were found dead as a consequence of five minutes' exposure, and from fifty to seventy-five per cent. of those that had been exposed ten minutes. This experiment was several times repeated, with the same average results. Even where the vines were smoked so strongly as to slightly scorch some of the leaves, the lice were not all killed.

The vapor of bisulphide of carbon was used more as a satisfaction to curiosity than for any other reason. Several leaves with plant-lice were placed under a bell-jar with a cubic inch of sponge steeped with the poison, and left exposed to the fumes for ten minutes. When examined. all were dead, and did not revive after an hour's exposure to the air. Five minutes' exposure was hardly sufficient, however, as the bugs, though seemingly dead at first, recovered in about three-quarters of an hour, and began to crawl about.

As a result of these experiments, we may say that no effective remedy was found applicable on a large scale, except at an expense which would considerably outweigh the benefit, especially as the probabilities are that the natural enemies of the plant-lice will put a stop to their ravages even sooner than artificial measures can do. For garden application I think tobacco smoke the most feasible remedy, but it should be applied repeatedly, and care should be taken to first shake and stir the vines, to drive away any of the winged parasites of the lice, which would otherwise be sacrificed with their hosts. There is little probability that the larvæ of these parasites which are still within the bodies of the lice, would be injured by the smoke. Some form of the kerosene mixture would probably answer nearly as well, except that it would doubtless kill these larvæ, and so retard the parasitism of the pests. A simple mixture of about one part of kerosene to twenty of water, would probably answer for this purpose, if kept agitated, as well as the emulsion. A remedy strongly recommended by Kaltenbach and some other European authors, is a weak solution of common salt, (one and one-half to two per cent.), thoroughly applied two or three times to the surface of the plant.

NATURAL ENEMIES

The natural enemies of these lice are of the usual kinds, and attack this species with their customary vigor. They include the common Coccinellidæ and their larvæ, the larvæ of Syrphus flies, and hosts of the parasitic Aphidius, which lays its eggs in the bodies of the lice. The extent to which this parasitism prevails at any given time, is a good index of the time the pest is likely to last, as the parasites, when once well started, multiply very rapidly, and will soon reduce the number of their hosts to insignificance. A parasatized louse may be recognized at a glance by the swollen body and the pale brown color—very different from that of the living insect. Where any large percentage of these are seen, only some unlucky turn of affairs can prevent the speedy suppression of the plant-lice, and the owner need waste little further anxiety on them.

The completeness of their disappearance at Normal may be inferred from the statement already made of the difficulty of finding a few specimens, about the middle of September, in the worst infested field in that vicinity.

SUMMARY.

This louse makes its appearance only in spring, and attacks cucurbitaceous plants generally, soon after they commence to grow, sometimes killing them at once. It continues its depredations upon all species of this order until frost kills the vines in fall, but prefers muskmelons to watermelons, and the latter to cucumbers. A root-form also occurs, but with unknown effect. The species is subject to the attacks of the usual enemies, which greatly interfere with its ravages, and often suspend them. The eggs are laid in autumn, apparently by preference upon the same ground where the adults developed. It is therefore prudent to destroy the old vines, and to avoid planting melons, cucumbers and squashes upon the same ground two years in succession.

Road dust, pyrethrum powder, tobacco smoke blown under the edge of a sheet or canvass covering, a weak mixture of kerosene and water (not over one part to twenty) are all more or less effective for their artificial destruction; but if their natural enemies are seen to be very numerous, the probabilities are that the lice have about finished their course for the season and had better be left unmolested. Whatever artificial application is made, care should be taken to shake the vines and leaves to drive away the winged parasites, which might otherwise be sacrificed with their hosts.

EXPERIMENTS WITH THE EUROPEAN CABBAGE WORM.

(*Pieris rapæ*, L.)

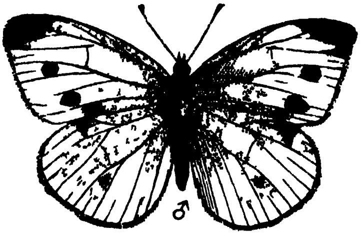

Fig. 15.—European Cabbage butterfly, male.

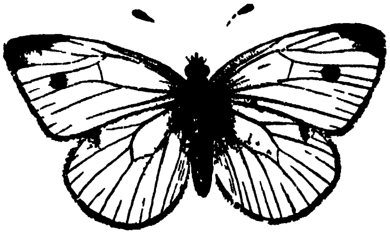

Fig. 16.—European Cabbage butterfly, female.

Fig. 17.—European cabbage worm and chrysalis: *a*, larva; *b*, chrysalis or pupa.

Whenever any species of noxious insect becomes abundant enough to attract general attention, the agricultural press, the proceedings of agricultural societies, and the conversation of those interested, commences to teem with recommendations of remedies. If one attempts to collate these various recommendations, he is at first surprised, then bewildered, then discouraged and disgusted at the number of substances which his list will include and the absurd and contradictory statements made concerning them; and he commonly finds himself thrown back at last upon the results of his own individual experiments. While the recommendations made are many of them of the highest value, the difficulty is to distinguish the useful from the worthless in the absence of any exact and sufficient knowledge of the facts on which they rest.

Under these circumstances, it evidently becomes one of the duties of the State Entomologist not only to make careful and elaborate experiments for the destruction of noxious insects, and to embody the results of these experiments in the form of recommendations, but also to give in full the evidence upon which his recommendations rest, in order that each may see for himself the amount and value of the proof.

No better illustration of this fact could have been selected than the European cabbage worm; and I have consequently taken pains to experiment with a few of the substances most generally recommended for the destruction of that pest. It was, of course, impossible to make a thorough trial of any considerable number in the single season during which this work has been under my charge, but the conclusions already reached have a definite and appreciable value, which will probably make them welcome as a contribution to the subject.

HOT WATER.

One of the applications most frequently advised is that of hot water at a temperature sufficient to destroy the worms, but too low to injure seriously the plants infested. A series of experiments upon the subject, made by Mr. Coquillet, of McHenry county, are described in the last report of my predecessor, Dr. Thomas, but as they were made at a time and place when the cabbage worm itself was not to be had, the conclusions arrived at are still open to question. As far as this species of caterpillars and plants experimented upon are concerned, Mr. Coquillet's experiments seem quite conclusive, but as various species differ greatly in their power to resist injurious conditions, the inference from the species used by him to the cabbage worm itself is not strictly warranted. For the purpose of testing the exact effect of water of different degrees of temperature upon the worm in the open air, and the cabbage plants attacked by them, I sent an assistant, early in September, into the field with an oil stove and a sprinkler, with instructions to test the matter thoroughly. The water was heated to a given temperature, as indicated by a good thermometer, and applied immediately to the infested plants. At 130° F., no effect whatever was produced upon either plants or insects. At 140° the worms were not injured, although they were apparently a little stupefied at first, and no perceptible effect was produced upon the plants. At 150° the worms were nearly all killed, but the cabbage plants themselves were also badly injured, the leaves, wherever the water struck, being parboiled, and subsequently withering. At 160° the same effect was, of course, produced, but was still more marked. The cabbages at this time were well headed out, many of the worms were full-grown, and the others of various sizes from a half inch upwards. These experiments go to show that the worms are fully as hardy as the cabbages.

POWDERED PYRETHRUM.

The general efficiency of pyrethrum as an insecticide has been so fully attested, and its use for the protection of cabbages recommended upon so high authority,* that the experiments were undertaken only for the purpose of exactly defining the conditions under which it could be most successly applied. The powder was obtained especially for this experiment from Messrs. Lehn & Fink, of New York, by whom it was said to have been recently imported from Europe. The powder was mixed for the first experiment with ten parts of flour, and left to stand one night before being used. Four nearly full-grown worms were selected and brought to the laboratory, where they could be carefully observed. The diluted pyrethrum was applied thoroughly with a powder-gun, and in ten minutes the worms all exhibited their uneasiness by quick, jerking motions. In fifteen minutes, they were crawling slowly about and writhing as if in pain. In twenty, they were also exuding a green fluid from their mouths. In thirty, all were still alive, but were stupidly rolling about on the table,. In forty minutes, one was lifeless, and the others were curling up as if nearly dead. In fifty minutes, two were still capable of motion, but the other two were helpless or nearly so. In an hour, three still showed some signs of life, but were barely able to move. In three hours from the time of application, three worms of the four were entirely dead, and the fourth was motionless, but showed some signs of life when irritated.

In the next experiment, a much smaller quantity of the powder was applied to two worms, nearly full grown, and a third about half full size. In ten minutes the small worm became uneasy. In another ten, one of the older ones was likewise affected, while the young one was writhing about in pain. In forty-five minutes both of the old worms were attacked, while the young one was nearly helpless. In an hour and a half the young one was dead, and one of the larger nearly so, while the third showed the effects of the poison, but in a much less degree. In six hours the larger worms were crawling about, although somewhat stupid; but by the next morning, that is, in twenty-four hours, both of the old ones had recovered.

In the next experiment, a small quantity of the same mixture was placed with the point of a knife on the backs of three worms of the same sizes as those used in the preceding. In ten minutes none of the worms gave any evidence of injury. In twenty minutes, however, the young one and one of the larger were curled up motionless, both exuding a green fluid from their mouths, while the other one was crawling about unaffected. In half an hour all of them were moving about, although somewhat stupid. In another hour all seemed to be recovering, and in six hours no further effect was perceptible. The worms all finally regained their usual activity.

Five specimens were then selected, two nearly full-grown, and three about five-eighths of an inch in length. They were placed in a shallow dish, and dusted with the pure pyrethrum powder, undiluted with flour. This had the usual effect upon the young worms in about five minutes, and in seven minutes upon the larger also. In fifteen minutes all of the worms were rolling about in a helpless condition. In an hour the smaller worms were nearly motionless, and the larger growing weaker. In an hour and a half all were apparently dead.

The preceding notes show the efficacy of pyrethrum, if freely applied to the worms, whether pure or diluted with flour, one part to ten. The dilution, however, slightly decreases the energy of its action. In order to determine whether the flour served as a simple diluent of the pyrethrum powder, or whether it absorbed and retained a part of the volatile and active principle of the plant and thus become itself an efficient insecticide, I wrapped a small quantity in a cloth, and imbedded it in a jar of pyrethrum powder, leaving it there for three days. It was then removed and dusted upon four cabbage worms, two nearly full grown, and two about half grown. In twenty-four hours the two smaller worms were dead, and the other ones unaffected. It is evident, therefore, that the flour absorbs a part of the active principle from the pyrethrum.

TOBACCO SMOKE.

The difficulty of reaching all the worms in a cabbage head by any application of a powder or liquid, after the head is pretty well grown, and especially after the worms have commenced to penetrate it, made it desirable to find some vapor which might be easily applied in a way to reach all the insects with destructive effect. Experiments were consequently made—first with tobacco smoke. Three cabbage worms were confined under a bell-jar, and exposed to the smoke of a cigar for ten minutes. A full-grown worm was scarcely at all affected. Both the smaller ones, a little over half an inch in length, were nearly lifeless, when removed from the jar. In a few hours, however, they had entirely recovered, and were apparently uninjured by their experience. Five individuals were next selected, ranging from half an inch in length to full-grown specimens, and were exposed to the smoke as before, for ten minutes, under a glass jar. All except one of the largest were badly affected, the three smaller being apparently nearly dead. In an hour and a half the two larger ones were crawling about, but two of the others were apparently killed. In two hours more, however, all were crawling about except one, and that showed evident signs of life, and probably would have recovered in time. No experiments were tried with longer exposure, because, even if successful, it would be found impracticable to apply tobacco smoke for a longer time in the field.

SULPHUR.

For some reason which I do not now remember, I thought it worth while to try a single experiment with the fumes of sulphur. One proved to be sufficient. The record is brief and conclusive:—exposed two minutes; plant killed, worms uninjured.

BISULPHIDE OF CARBON.

The vapor of bisulphide of carbon was also used, not with any expectation of a practical application to cabbage plants, but to further test the hardiness of the worms. Two nearly full grown specimens were placed under a bell jar of about a gallon capacity, and about half a cubic inch of sponge was saturated with the fluid and placed under the shade with the worms. The effects were apparent in less than a minute, and in five minutes both the worms were rolling about, disgorging a green fluid. When the shade was removed at the end of ten minutes the worms were not dead, but completely torpid. In three-quarters of an hour they showed some signs of life, and in four hours were evidently slowly recovering. In three hours more they had completely regained their activity and crawled away. Again, three worms, one half grown, and the others of full size, were exposed under a smaller jar for the same length of time. When the glass was removed, none of them showed any sign of life. In three-quarters of an hour, however, the young one was crawling about and the old began to move, and in two hours longer, all had recovered and disappeared.

KEROSENE EMULSION.

The emulsion of kerosene which had previovsly been found effective with the chinch-bug and plant-lice, was next tried upon these worms. It was made of equal parts of kerosene and milk, and diluted at first with fifteen parts of water. Three full-sized worms were selected, with one half-grown, and thoroughly sprayed with the mixture. All showed evident signs of discomfort, the smaller ones being most affected; but in three or four hours all had fully recovered. A dilution of double the strength of the preceding was next sprayed upon two full-grown worms, and two half-size. In four minutes all were writhing about upon the table, and in fifteen minutes were nearly lifeless. Five hours later two were dead, and the others helpless, and three finally died. A mixture of medium strength, containing one part to twelve of kerosene, was next applied to five of the worms, ranging from full-size down to about one-fourth grown. In half an hour all were badly affected, and the three smaller apparently dead. In forty minutes all showed signs of life. In three hours the larger ones were crawling about, while the smaller ones were torpid. Only one of the smaller worms finally died, and all the others recovered.

From the preceding experiments it is clear that a mixture of about one part of an emulsion to eight or ten of water (kerosene five or six per cent.) will destroy the greater part of the worms, and if applied before the individuals are full-grown, would apparently kill about all of them,—in fact, it seems to be scarcely less efficient than pyrethrum, and is much cheaper, although the labor of preparation on any large scale would be very considerable. Neither of these insecticides can be used to advantage after the cabbage has headed up to any considerable extent, as the worms are then able easily to conceal themselves, and but few would be reached by the spray or powder. This was shown by a field experiment with the kerosene emulsion, one part of kerosene to twenty of water. Two heads were thoroughly wetted with the mixture applied with a small syringe, at 4:30 in the afternoon. One of these was rather large and solid, the other much less compact. All the worms exposed to the full action of the fluid were killed, but about nine-tenths of them escaped. The plant was not at all injured by the application.

SALTPETRE AND SALT.

Having seen frequent and very favorable mention of a solution of salt and saltpetre, as a means of ridding the cabbages of these worms, a solution of an ounce of saltpetre and four ounces of salt to two quarts of water was sprayed upon several worms without appreciable effect. Four full-grown worms were then thrown into a dish containing the fluid and left two minutes, but were not injured in any degree. Three others were kept in the solution for four minutes, and ten minutes later had recovered and crawled away. I conclude, therefore, that this insecticide would be effective only if applied in sufficient quantity and for a long enough time to drown the worms.

LIME.

Freshly air-slacked lime has also been recommended, and eight worms were thickly dusted with the powder to test its value. The next morning after the application of the lime, only one of the eight was found to be at all affected, and that was still alive.

TAR-WATER.

A spray of water that had stood for several days upon coal-tar was next thrown upon the worms, eight nearly full-grown and two about half-size. Three of these which were thoroughly drenched with the fluid, were found dead after several hours, but none of the others were affected.

From the preceding experiments we infer that none of the substances tried were of any practical value except the pyrethrum and kerosene, and that these could be used with good effect in the field only early in the season, before the plants had formed a head, or while the worm was still small. As the butterflies lay their eggs continuously for several weeks, any application, to be entirely successful, must be several times repeated.

MISCELLANEOUS NOTES.

The Cherry Slug or Pear Slug. (*Selandria cerasi*, Peck.)

Order HYMENOPTERA. Family Tenthredinidæ.

Fig. 18.

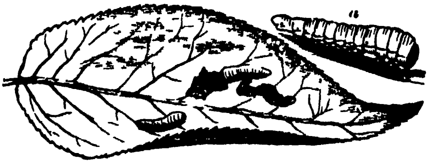

Fig. 19.

[A slimy, olive-green worm, half an inch long when full grown, gnawing away the substance of the upper surface of the leaves, in June and July, and again in August and September.]

Although this species was carefully studied and fully described by Prof. Peck in 1790, and also discussed at length by Dr. Harris in his Insects Injurious to Vegetation in Massachusetts, I judge from numerous inquiries received this summer, that it is not as well known to horticulturists in Illinois as it should be. As it has not yet been treated in the reports of the State Entomologists either of Illinois or Missouri, a brief account of it and of the methods of meeting its ravages will not be without value.

This insect was quite abundant and destructive to the cherry throughout the northern third of the State during the past summer, although I neither saw nor heard of any especial injury to other fruit trees. At Elgin, on the 18th of July, several cherry trees were seen with their leaves completely denuded; and smaller numbers of the larvæ were found on the cherry at Rockford, and on the pear and cherry at Waukegan. It was also reported destructive to cherries at Montgomery, in Kane county, and was sent me by a correspondent from Aurora, on the 22d of July, where it was said to have completely defoliated the Richmond cherry, and to have somewhat injured sweet cherries, pears and the mountain ash. The effect of this destruction of the leaves in midsummer is to compel the tree to put forth new foliage, thus taxing its vitality in a way to endanger the crop of the following year. As the larvæ return again for a second attack upon the trees in autumn, the consequences may easily become serious.

Description and life history.—The larvæ, or slugs, as they are improperly called, are white at first, but soon become covered with an olive slime, which gives them something of the appearance of the naked snail to which the name slug properly belongs. They are further easily distinguished from any other larvæ feeding upon the leaf by the fact that they are much thicker in front than behind, tapering gradually posteriorly. They have twenty very short legs, the first three pairs jointed, the remainder fleshy prominences, commonly known as prolegs. The head is of a dark chestnut color, small, and usually concealed under the fore part of the body. They live mostly on the upper side of the leaves of the trees, eating away all the parenchyma, leaving only the veins and epidermis of the under side. The slugs shed their skins five times, and after the last moult they lose their slimy covering and olive color, and are then yellow and free from mucus. From the 1st of July to the middle of August, having gained their growth, they leave the trees and burrow to the depth of one to four inches, forming an oval cavity in the earth, where the change to pupa occurs. From these cells they escape in the form of saw-flies from the middle of July to the last of August. The winged insect is about one-fifth of an inch in length, and is of a glossy black color, excepting the first two pairs of legs, which are a dirty yellow or clay color, with blackish thighs, and the hind legs, which are dull black with clay colored knees. The wings are transparent, iridescent, with brownish veins, and with a smoky cloud or band across the middle of the third pair. These saw-flies may be found on the leaves of the trees in early morning, or in the cool of the evening, at which time they are sluggish, and not easily disturbed. Their eggs are laid singly within little semi-circular incisions through the skin of the leaf. From these a second brood of the slugs soon hatch, which get their growth and go into the ground again in September and October, remaining there until the following spring, when most of them are changed to flies and leave their winter quarters. Some of them, however, commonly remain unchanged in the ground until the following year, so as to continue the species if any complete destruction should overtake the remainder of the brood. These spring flies lay their eggs as already described, usually in June, the minute worms appearing in about a fortnight afterwards.

Remedies.—Various substances have been suggested for the destruction of this pest, but unfortunately some of those most generally recommended have really little effect. Among these remedies of doubtful efficiency I may mention fine sand, and dust and ashes. Some experiments made with these substances by Mr. Wm. Saunders, of Ontario, Canada, are worth quoting entire:

"As soon as the slugs were observed at work in the spring, they were treated to a plentiful supply of dry sand, thrown up into the higher branches with a shovel, and shaken over the lower ones with a sieve, which stuck thickly to their slimy skins, completely covering them up. Thinking we must have mastered them by so free a use of this long trusted remedy, we took no further heed of them for some days, when, to our surprise, they were found as numerous as ever. The next step was to test this sand remedy accurately to see what virtue there was in it. Several small branches of pear trees were selected and marked, on which there were six slugs, and these were well powdered over—entirely covered with dry sand; on examining them the next morning it was found that they had shed the sand-covered skin and crawled out free and slimy again. The sand was applied a second and third time on the same insects with similar results, and now being convinced that this remedy was of little value, they were treated to a dose of hellebore and water, which soon finished them. Ashes were now tried on another lot, the same way as the sand had been, with very similar results. It was also intended to try fresh air-slacked lime, which we believe would be effectual, but having none on hand just then, the experiment was postponed and the opportunity of testing it lost for the season."

A far more serviceable remedy is powdered hellebore, and an experiment with this by the same entomologist is equally conclusive:

"On the 13th of August, at eight A.M., a branch of a cherry tree was plucked, on which there were sixty-four slugs; the branch had only nine leaves, so that it may be readily imagined that they were thickly inhabited. A dose of hellebore and water was showered on them about the usual strength, an ounce to the pailful, when they soon manifested symptoms of uneasiness, twisting and jerking about in a curious manner; many died during the day, and only six poor, sickly-looking specimens remained alive the following morning, and these soon after died."

Unquestionably, Paris green or other arsenical poisons would be equally effective if applied to either brood of the worms; but if the trees were bearing, its use would of course be inadmissable except for the second brood. Some have also recommended shaking the flies down from the trees early in the morning, or late in the evening, catching them on cloths and taking care to destroy them before they can escape.

THE WHITE-MARKED TUSSOCK CATERPILLAR (*Orgyia leucostigma*, Smith).

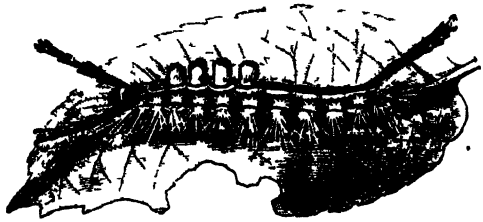

Fig. 20.—The White-marked Tussock caterpillar (*Orgyia leucostigma*, Smith).

This beautiful caterpillar is easily recognized by the four large brush-like tufts of fine hairs on the front part of the back, and the two long black pencils of hairs extending backwards and forwards from each end of the body. It was reported to me last fall as occurring in unusual numbers throughout the northern part of the State, and the egg-clusters upon the leaves of apple trees attracted the general attention of orchardists in the fall. It has not been especially abundant or destructive before since 1870, at which time it was treated in the report of Dr. LeBaron, then State Entomologist. It was also further discussed by Dr. Thomas in the seventh report, for the year 1877; but as there is a present prospect of an unusual development of this insect, it will be profitable to call attention to it at the present time. The usual method of prevention recommended is that of removing the egg clusters in the fall. The eggs are laid by the female upon the outer surface of the cocoon from which she has just emerged, forming very conspicuous objects upon the leafless limbs. As they do not hatch until May or June, they may be removed at any time in the winter or early spring. Doubtless, if this has been neglected, the spraying of the foliage during the months of June or September with Paris green or London purple, suspended in water, would also be a perfect remedy.

THE BAG-WORM (*Thyreodopteryr ephemeraformis*, Haw).

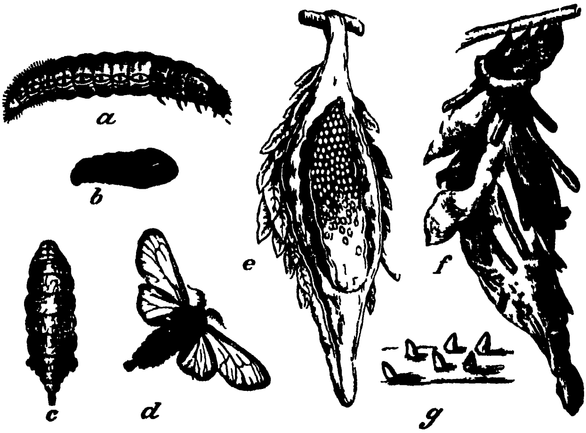

Fig. 21 – The Bag-worm. (*Thyreodopteryx ephemeraformis*, Haw). *a*, Larva, fully grown, *b*, male chrysalis, *c* female moth; *d*, male moth; *e*, bag containing female chrysalis, with eggs, *f*, fully grown larva carrying its bag, *g*, young worms.

The general abundance of this pest upon cedars and some other trees in Southern Illinois calls for special mention. The small conical bags, attached to the twigs of the tree, cannot be mistaken for anything else. Many of these contain the eggs, which remain throughout the winter and hatch in the following May. They may consequently be removed and destroyed by hand in the winter and spring, or the trees may be protected by spraying with Paris green or other similar poison in June or July, when the worms are eating the leaves.

THE ARMY-WORM, (*Leucania unipuncta*, Haw).

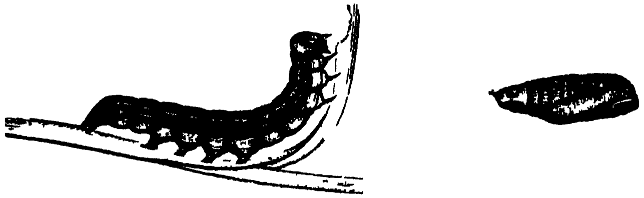

Fig. 22.—Army-worm (*Leucania unipuncta*, Haw). Larva and chrysalis.

The army-worm appeared in destructive numbers throughout Southern Illinois in March and April of this year, attacking especially the grass and wheat, but did not attract general attention until later in the season. Another brood of the worms appeared in June, in Central Illinois, doing no serious damage, however, except in restricted localities. As a contribution to the life history of this insect the following dates of its appearance are noted. A living moth was taken at Normal on the 18th of March. A colony of half grown worms was seen at Bloomington on the 22d of June, and on the 24th another colony of about the same age was noticed in the lawn of the poor farm, six miles below that city. On the 30th, moths were found very abundant at Normal on the blossoms of red clover. On the 1st of July many young army-worms in the first and second stages occurred upon the grass at Normal; and on the 3d of that month the brood noticed at the poor farm had all pupated in the ground, while on the 12th moths were taken very abundantly at sugar at Normal. On the 27th, however, the moths were scarce at sugar, but on the 1st of August a few larvæ, about three-eighths of an inch long, were noticed in a field of oats in McLean county. We have here, consequently, evidence of three distinct broods in Southern and Central Illinois, although the cold and wet weather of the early spring was especially unfavorable to the development of insect life.

Near Centralia, damage was done by this worm in strawberry fields, the foliage being eaten and the unripe berries gnawed from their stems.

The history of the brood of worms observed near the poor farm, in McLean county, is worthy of especial attention, as showing the power of the checks to which this species is subject, and serving to explain why two successive injurious broods rarely or never appear in the same locality. When first noticed, on the 24th of June, these worms were doing serious damage to a heavy growth of timothy on high ground, marching from one side of the lawn to the other. By the 3d of July, the season for the transformation to pupæ had been reached, but apparently not over twenty-five per cent. of the worms succeeded in effecting the change, the remainder dying in such numbers that the ground was reeking with a sickening stench. At the same time clusters of the cocoons of one of the common parasites of the army-worm were found everywhere abundant on the surface of the ground, and in some cases on the dried remains of the army-worm itself. Of seventy-six pupæ of the worm, collected in this field at this time, but one reached maturity.

THE CABBAGE CUT-WORM (*Agrotis annexa*, Fr.)

The larva of this moth (kindly determined for me by Prof. C. V. Riley) was found destroying young cabbage plants at Normal in the middle of April. It came out of the ground when the sun was warm, cut off the plants at or near the surface, and then ate the leaves. In a garden containing 600 plants not over twenty or thirty were left. The owner killed about 200 worms on the first day of their appearance, and 500 or 600 on the day following. The field was afterwards set to late cabbages, which were not molested. The application of Paris green would have probably exterminated the worms, if made in time.

THE STALK-BORER (*Gortyna nitela*, Guénee).

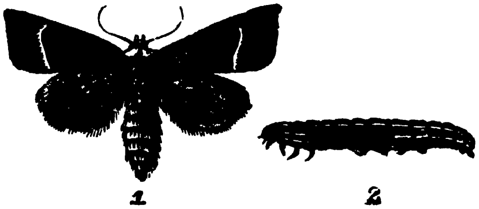

Fig. 23 Stalk borer (*Gortyna nitela*, Guenee). 1 Moth, 2 larva.

This worm was found injurious to oats throughout Central and Northern Illinois, in July and August. The effect upon the grain was to blast the head, preventing the kernel from filling.

The entrance of the worm to the stalk was made anywhere from above the first joint to the fourth joint below. The worms found in the oats were not more than half grown, and the size of the openings by which they entered the stalk made it evident that they were not hatched upon this grain. In some cases they emerged by the orifice of entrance, and in others made a separate exit. The difference in size between the openings of entrance and exit was usually trivial, showing that the worms grew but slightly in a single stalk. But one larva to a straw was found, except in a single instance, where two had met face to face. One of these had attacked the other, and eaten away part of its head, although both were still living. The damage done, as far as noticed, was within a few rods of the margins of the fields, showing that the worms had penetrated from without. They had doubtless bred in the grass and other weeds adjacent, and such injury as resulted might probably have been prevented by keeping down the weeds outside the field.

THE ZEBRA CATERPILLAR (*Mamestra picta*, Haw.)

A single larva of this species was found at Normal in September, feeding upon kernels of corn in the ear.

THE PURPLE CABBAGE WORM (*Orobena rimosalis*, Guenee.)

This species continues abundant in Southern Illinois, doing its principal damage in September. It is also found injuring late cabbages early in October. Many of the larvæ collected in Union county during the latter part of September, were found parasitized. Several masses of the white silken cocoons of hymenopterous parasites were found upon shriveled remains of the caterpillars. This parasite, belonging to the group of Microgasters, is apparently new, and a description is herewith given.

Apanteles orobenæ, n. sp. Length, two and a half millimeters. Head, thorax and abdomen black; first two segments of the last with the edges and under surface paler; antennæ black throughout, as are also the trochanters and coxæ of all the legs; femora and tibiæ all yellow; tips of posterior femora dusky above; tarsi more or less dusky, especially those of the posterior legs. The wings are hyaline; the stigma and veins yellowish-brown. The mesothorax and scutellum are thickly set with fine punctures, largest on the latter; metathorax coarsely and closely punctured, with a delicate median carina; the first two segments of the abdomen opaque and closely punctured above, the remainder smooth and shining. The first cubital cell angular externally, and extending beyond the middle of the stigma; posterior discoidal cell widely open. Described from twelve specimens, male and female, bred from the cocoon.

Colaspis brunnea, Fab., was found in great numbers on clover in fields at Waterman, Ill., in July, 1881.

Diabrotica 12-guttata, Oliv., was seen feeding upon the pollen of corn in the field, August 1, 1882, and also upon blossoms of red clover during the same month.

Macrobasis unicolor, Kirby, is reported by Mr. Webster to feed upon the leaves of red clover.

Epicauta vittata, Fab., was seen by Mr. Webster, eating the fruit of the tomato in 1881, and eating silk from ears of corn in the fields in August, 1882.

Mr. Garman observed *Epicauta cinerea*, Forst, upon tomato plants in Southern Illinois, doing serious damage by eating the leaves and tender branches, a dozen sometimes occurring on a single branchlet.

Epicauta pennsylvanica, DeG., was also seen by Mr. Webster, feeding upon the silk of corn in August.

Epicærus imbricatus, Say, was found feeding on the blossoms of red clover at Normal in June, 1882.

Flata conica, Say. *Ormenis pruinosa*, Say, and *Hydnocera pallipennis*, Say, were all found abundant upon osage orange in August, 1882.

Lygus lineolaris, Beauv., was extremely abundant in fields of corn, sucking the sap from the tassels, in July.

THE FOOD RELATIONS OF PREDACEOUS BEETLES.

No facts are of more fundamental importance to a correct understanding of the general principles of economic entomology than those relating to the fluctuations of numbers among insects. While it is probably true that all species fluctuate more or less, their numbers varying considerably, one year with another, it is certainly also true that different species differ extremely in this particular, some remaining relatively constant, and others undergoing the greatest extremes of abundance and scarcity.

Even without experience of the fact, we might easily see that the widely fluctuating species must be most injurious to agriculture. Against the attacks of those insects which, appearing year after year in the same numbers, produce a uniform and steady drain on their resources, the plants infested by them have necessarily learned to protect themselves by producing a surplus of sap, of foliage, of bloom and of fruit; and we consequently find it a general rule with plants of all descriptions, both wild and cultivated, that they will endure a considerable loss of numbers or of substance without appreciable injury to the organism or species as a whole, or to its reproductive power.

But against the overwhelming attack of those enemies which leave it for a time unmolested, and then burst forth in innumerable, devouring hosts, it is far less easy for the vegetable world to defend itself; and such insect outbreaks never fail to leave their traces for a considerable period. How greatly the damage to agriculture inflicted by insects of inconstant numbers, subject to uncontrollable outbreaks, exceeds everything done to our crops by those of the more constant class, a few comparisons of familiar species will make evident. If we contrast the consequences of a visitation of the "rocky mountain locust" with the effects on vegetation of even the commonest of our resident grasshoppers, or if we compare the damage done by the chinch-bug with that attributable to all other members of its order taken together, or the injuries of the army-worm with those of the common "grass-worms" of our meadows, we shall have striking but fair illustrations of the relative harmlessness of those insects whose numbers vary but little from year to year. In short, it is not too much to say that if the oscillations of insects could be suppressed so that each species should be represented each year by an identical number of individuals, by far the most important problems of economic entomology would be solved.

It follows, of course, from the above, as a general rule, that every natural agency originating or stimulating oscillations of numbers among insects is to that extent an injury, and every agency tending to prevent such oscillations, or to limit and reduce them after they have arisen, is a benefit in that particular. In fact, so overshadowing is the importance of insect injuries due to what we may call a disturbance of the balance of plant and insect life, that the point of view from which all natural checks on insect multiplication should be considered is that of their effect on such disturbances. Concerning a predaceous or parasitic insect, an insectivorous bird, or a parasitic plant, the main question of interest to the economic entomologist is, what is its effect on insect oscillations?

In truth, however desirable total extermination of any insect may be, it is evident that we cannot expect this result from the depredations of those of its enemies which are dependent upon it for food. The adjustments of nature are not so clumsily made. The best that we can expect from any predaceous or parasitic organism, is that it shall hold the species which it infests, or upon which it preys, steadily down to a fair average number.

Concerning every such organism, we have therefore three questions to ask:

1. Does this bird, insect or plant originate any oscillations among the species of insects which it affects? That is, are its numbers or habits so inconstant from year to year, that insects which are at one time vigorously attacked by it, are at other times relatively free from its injuries, and allowed to multiply without restraint?

2. Does it prevent or restrain any oscillations of insects now noxious, or capable of becoming so, if permitted to increase more freely? That is, does it bring to bear upon any species a constant pressure so great, that those insects would increase unduly, if this pressure were removed by the destruction of this enemy?

3. Does it do anything to reduce existing oscillations of injurious insects? Does it sometimes vary, either in numbers or habits, in, such a way as to affect injuriously to an extraordinary degree those species which for any reason become superabundant for a time?

When these questions are answered for any beneficial species, or one whose economic relations are in doubt, we shall be able to estimate intelligently its usefulness, while without this such an estimate will evidently be impracticable.

The present paper is an attempt to answer these questions, in part, with reference to some of the most important families of carnivorous insects.

The two most important families of insectivorous beetles, are the ground beetles (Carabidæ) and the ladybugs (Coccinellidæ), the latter noted for their destruction of plant-lice, and the former making a variety of insects their prey, and feeding, also, to some extent, upon vegetation.

The view of the functions of these two families which is common among entomologists is certainly based upon insufficient data. Observations of the food of these beetles have hitherto been left almost wholly to chance, and have nowhere been systematically pursued,—from which it has resulted that we know their habits only in the most conspicuous situations, and have not a fair idea of the general average of their food. Neither have observations of any kind been numerous enough to enable us to detect clearly differences of food habit in different species or genera of these families; but, with slight occasional exceptions, all Carabidæ have been classed together as essentially carnivorous. The following notes are a contribution to a more exact knowledge of this subject:

The method followed has been that of dissection. The alimentary canals of beetles, taken in a great variety of situations, at various seasons and at different times of day, have been removed, placed in glycerine on microscope slides, and opened with small knives and mounted needles, so as to display the contents completely. These have been studied with whatever power of the microscope was necessary, and mounted as microscope slides for permanent preservation and repeated examination.

A few special collections of predaceous beetles were made in situations where some particular species of noxious insect was particularly abundant, with a view to determining to what extent the latter was preyed upon by its supposed enemies.

Those from the orchard infested by canker worms, and those from a corn field overrun by chinch bugs, were made by myself; the other insects dissected for this report, were partly obtained in the course of miscellaneous collecting, and partly secured for me especially for the purpose, by one of my entomological assistants, Mr. F. M. Webster, who kept careful notes of the situations in which the specimens were taken, the hour of day when they were captured, and the objects upon which it seemed probable that they had lately fed. Examples of the latter were frequently bottled, with the specimens, for comparison.

THE PREDACEOUS GROUND BEETLES (*Carabidæ*).

This large and important family of beetles is distinguished by their slender or filiform or slightly tapering antennæ, taken in connection with their five-jointed tarsi; by the articulated outer lobe of the maxillæ, giving an appearance of six palpi, and by the large egg-shaped posterior trochanters.

The fourth and fifth tarsal joints are not connate, but the first three ventral segments are; and the first ventral segment is divided into three parts by the hind coxal cavities. The antennæ are eleven-jointed, and inserted at the sides of the head, between the base of the mandibles and the eyes.

As their common name implies, they are found mostly on the ground. They never attempt to escape by flight, but run with great rapidity.

My notes upon the food of this family are derived from the dissection and study of one hundred and twenty-five specimens, representing thirty-eight species and twenty genera. Eighty-two specimens were collected in miscellaneous situations, twelve were taken in a field infested by cabbage-worms, ten in a corn-field overrun by chinch-bugs, and seventy-one in an orchard which was being destroyed by canker-worms. The first collection, of eighty-two specimens from various situations, represented thirty-two species, belonging to eighteen genera. They were obtained in different parts of the State, from DeKalb county in the north to Union in the south, and at all seasons of the year, from April to October, and doubtless represent fairly well the food of the family in Illinois during the entire year. The collections illustrating the food of the Carabidæ as related to the cabbage-worm were made in a field of young plants at Normal, Ill., in April, 1882, where the larvæ of *Agrotis annexa* were abundant and destructive.

The collection showing the food of this family in the presence of the chinch-bug consisted of ten specimens of a single species found in July, 1882, very abundant about the roots of corn in a field where the bases of the stalks were largely covered by young chinch-bugs.

The third special collection consisted of seventy-one insects, representing nineteen species, obtained in May of two successive years (1881 and 1882) in an orchard which had been infested for several years with the canker-worm to such an extent as to cause the total destruction of a large part of the trees.

GENUS CALOSOMA.

This genus is represented by three specimens of the brilliant green *C. scrutator,* collected in the orchard with the canker-worms, and by nine of *C. calidum,* which were from various situations.

Extremely minute fragments of insect crust were found in five of these beetles, and were reckoned at about half the entire food of the group, the remainder being distinguishable only as apparently derived from animal sources.

GENUS SCARITES.

Two specimens of *S. subterraneus,* taken in 1882, one at Normal and the other at Anna, in Southern Illinois, had eaten only animal food, one-half of which was unrecognizable, and the remainder insects. Four specimens of the same species, taken in the cabbage-field, have a similar record.

The above nineteen specimens, belonging to three species, were the only examples of *Carabidæ proper* whose food was studied, and all agreed in a strictly carnivorous character.

GENUS GALERITA.

Seventeen specimens of *Galerita janus* (an abundant beetle, with purple wing covers and rufous head and thorax,) had made a much more varied record. Four of these were from various localities, and thirteen were from the orchard infested by canker-worms. All of the group first mentioned had eaten insects, which amounted to eighty-eight per cent. of their food, nearly all caterpillars of undetermined species. The remaining twelve per cent. consisted of vegetable food eaten by two of the specimens, and was apparently derived chiefly from the seeds of grass. A larger ratio of animal food is noticed in the thirteen taken where canker-worms abounded. Here vegetation amounted to only six per cent., all of exogenous origin, as shown by the branching bundles of spiral cells in the vegetable fragments noticed, while the animal food amounted to ninety-four per cent.

If from the ratios of animal food taken by the examples from the orchard we subtract the ratio of canker-worms (fifty-two per cent.) the remainder is just seven times the ratio of vegetation eaten. Recalling the percentages of animal and vegetable food taken by the four specimens first mentioned, we find that here also the former is almost exactly seven times the latter. This goes to show that the canker-worms eaten were *in addition* to the ordinary ratio of animal food taken by this species under the usual conditions.

Genus Loxopeza.

But three specimens of this genus were studied, all *L. atriventris.* Their stomachs contained fragments of insects, pollen and anthers of blue-grass, and immense numbers of the spores of a fungus (probably Phoma) which forms small black specks on dead wood, stems of weeds, etc.

Genus Calathus.

Six examples of *Calathus gregarius,* three from DeKalb county and three from the orchard, were the only representatives of this genus.

One-third of the food of those first mentioned consisted of caterpillars, a second third of other insect larvæ, and the remainder of the pollen of grass. The food of the second group was extremely similar, a third consisting, as before, of vegetation, another third of canker-worms, and the remainder of insect fragments not further determinable.

Genus Platynus.

The stomach of a single *P. decorus,* taken in the orchard, contained only liquid animal food. Two examples of *P. limbatus,* both from Southern Illinois, in April, had derived about four-fifths of their food from the vegetable kingdom, partly seeds of grass and partly the parenchyma of exogenous plants. The remainder consisted entirely of Aphides (plant-lice). These specimens were doubtless too few to give a correct idea of the average food of the genus as a whole.

Genus Evarthrus.

Five specimens of *E. colossus,* taken at various dates and places, had derived about one-tenth of their food from endogens, and the remainder wholly from insects. Twenty per cent. eaten by one of the beetles was recognized as caterpillars. Scarabæidæ are credited with another twenty per cent., and undetermined larvæ of Coleoptera with about an equal ratio. Minute quantities of fungi were noticed in the stomachs of two of these beetles, and traces of undetermined algæ in one.

Two examples of *E. sodalis*, taken in the Tazewell county orchard, had consumed only insects, all canker-worms, except traces of an ant and a single gnat.

The insect ratio of the food of the genus, as represented by these seven specimens, stands at ninety-three per cent.

GENUS PTEROSTICHUS.

Thirteen specimens were dissected, representing *P. permundus*, *P. sayi*, and *P. lucublandus*.

The number of each species is not sufficient to give distinctive food characters, and the genus may therefore best be treated as a whole. Seven of the specimens, taken in miscellaneous situations in Central Illinois, in April, May and September, had found about one-fourth of their food in the vegetable kingdom, about one-third of which consisted of fungi. Forty-three per cent. consisted of insects, and a single mite occurred in one of the beetles.

Three specimens taken in the orchard infested by canker-worms had eaten vegetation to the amount of about one-fifth of their food. Caterpillars made eleven per cent., and undetermined insects two per cent., the remaining ratio being accounted for by the presence of liquid animal food. Two-thirds of the contents of three specimens taken among the cabbages consisted of animal matter, half of which was clearly recognized as the larvæ of *Agrotis annexa* infesting the field; the remaining third, composing the entire food of one of the beetles, consisted wholly of fragments of grass.*

GENUS AMARA.

Six specimens of this species were dissected, three of *A. carinata*, one of *A. angustata*, and two of *A. impuncticollis*. Three specimens of *A. carinata* taken in Southern Illinois in April, 1882, had eaten only vegetation, about one-fourth of the food being recognizable as fungi. Ninety per cent. of that of a single *A. angustata*, taken in June, consisted of mites, the remainder being fragments of grass. An *A. impuncticollis*, taken in the orchard with the canker-worms, had eaten only vegetable food, chiefly undetermined, but with traces of fungi. Another of the same species, from the cabbage field, had derived its food about equally from plant and animal sources, that from the former consisting chiefly of grass.

GENUS DICÆLUS.

Three examples of *Dicælus elongatus* had taken only animal food, as indicated by the fluid contents of the stomachs. One of these was found in the orchard and the other in Central Illinois.

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* A specimen of *P. lucublandus* was seen by Mr. F. M. Webster making a meal from a dead *P. sayi*.

GENUS CHLÆNIUS.

This abundant genus is represented by twenty-three individuals, the next to the largest number studied of any genus of Carabidæ. Six examples from Southern Illinois, collected from April to September, belong to the species *C. diffinis*, *C. nemoralis*, and *C. tomentosus*. The animal food of these was about three times the vegetable. Two-thirds consisted of insects, of which caterpillars alone were determinable, and earth-worms eaten by one of the beetles made about eight per cent. More than half the vegetable food consisted of fungi. Fragments of exogenous plants were recognized in one of the beetles. A single *C. diffinis*, taken among the cabbage-worms, had eaten only insects, chiefly a caterpillar and a larva of a beetle; a mere trace of endogenous vegetation was also detected. Of sixteen specimens collected among the canker-worms, three were *C. erythropus* and thirteen *C. diffinis*. Cut-worms made about one-third of the food of the first, and earth-worms the remaining two-thirds. The latter were easily distinguishable by the peculiar spines mixed with dirt in the stomachs of the beetles. About ninety per cent. of the food of the other species was of animal origin, and about half the vegetable food was fungi. Insects made seventy-two per cent., nearly half caterpillars, of which the greater part (thirty-one per cent. was canker-worms. Fragments of a fly were observed in one of the beetles, and another had eat . one of the *Telephoridæ*. Mites and myriapods (Geophilus) had also been devoured by one.

GENUS AGONODERUS.

Fifteen specimens of the superabundant little beetle *Agonoderus comma* were studied, ten of which were collected from the ground about hills of corn in a field which was badly infested by chinch-bugs, and contained also a great many plant lice; while many ants of a species everywhere common, were seen about almost every hill. Fragments of chinch-bugs were found in four of the beetles, and amounted to about one-fifth of the food of all, and plant lice taken by half that number amounted to about eight per cent.; a single ant, *Lasius flavus*, eaten by one, was rated at five per cent., and other insects brought the general average of the class up to thirty-five per cent. Vegetation made just half the food, all fragments of the higher plants, except two per cent. of common fungi. Four specimens, from different situations, had made a similar record, differing only by the presence of a few mites in the stomach of one of these beetles. Eleven per cent. of fungi was taken by the group last mentioned. The circumstances of capture, together with the contents of the stomach of one of these beetles, indicated that it had made its meal chiefly from the seeds of June grass; but the remainder of the vegetable food could not be more definitely classified. A single Agonoderus, taken among the cabbages, had eaten only undeterminable food.

GENUS ANISODACTYLUS.

This large and abundant genus is represented by thirty-one specimens, belonging to six species. Nineteen specimens, collected in various places, belonged to the species *A. rusticus, discoideus, baltimorensis, harrisi, sericeus* and *opaculus*. Animal matter made about one-fourth of their food, recognizable insects being estimated at only three per cent.; the vegetation, as far as determined, was chiefly derived from June grass and other grass-like plants.

The record of ten specimens taken from the canker-worm orchard is not especially different from that of the foregoing group. Only one of these had eaten animal matter at all, ninety per cent. of the food of this consisting of undetermined Diptera. Here, again, the recognizable vegetation was chiefly graminaceous, only ten per cent. being clearly derived from exogenous plants. Two specimens from the cabbage field afford no occasion for special remark. The stomach of one was distended with liquid animal food; that of the other contained vegetation only.

GENUS AMPHASIA.

Four examples of *A. interstitialis* indicated that this species is almost strictly vegetarian, only three per cent. of the food consisting of insects. Of the remaining ninety-seven per cent., little can be said except that it was certainly of vegetable origin.

GENUS BRADYCELLUS.

A single specimen of *B. dichrous* had eaten only insects, which could not be further classified.

GENUS HARPALUS.

Nineteen specimens of *Harpalus* were studied, belonging to the three species *caliginosus, pennsylvanicus* and *herbivagus*. Twelve of these, taken at various times and places, had obtained more than nine-tenths of their food from the vegetable kingdom. Most of this consisted of the pollen of flowers, and of the tissues of grasses, although various fungi amounted to thirteen per cent. Three specimens of *H. caliginosus* and *H. pennsylvanicus*, taken among the canker-worms, had derived one-third of their food from those caterpillars, while the other two-thirds consisted of vegetation, sixteen per cent. being fungi, and the remainder chiefly seeds and exogenous tissues. Four specimens of *H. herbivagus*, collected in the cabbage field, in April, had eaten none of the cabbage-worms, and only ten per cent. of insects (Diptera). The remainder of the food consisted apparently of fragments of seeds, as indicated by the contents of the cells of the fragments and by other microscopic characters. A piece of the epidermis of grass was noticed in one of the beetles. Taking the genus Harpalus as a whole, as far as these nineteen specimens can be supposed to indicate its food, we find that only about one-eighth of it consisted of animal substances. Insects stand at nine per cent., two-thirds of them caterpillars,—ants and Diptera making up the balance. Among the items on the vegetable side of the account, we find fungi and pollen of Compositæ, each eleven per cent., and seeds and other tissues of grasses, fourteen per cent.

GENUS PATROBUS.

Two specimens of *P. longicornis*, one from Central and the other from Southern Illinois, had eaten nearly twice as much vegetation as animal food. The latter consisted chiefly of caterpillars, and included in fact nothing else but traces of plant-lice, eaten by one of the two. A little of the vegetation was derived from grass, but the source of the remainder could not be satisfactorily traced.

THE FAMILY AS A UNIT.

We have now to treat the various collections of Carabidæ upon which this paper is based, as distinct and unbroken groups, without reference to the genera of which they are composed. The eighty-three specimens of all the species obtained in miscellaneous situations, are found to have derived forty-two per cent. of their food from the animal kingdom, while the seventy specimens captured in the orchard so often mentioned, took seventy-seven per cent. of their food from the same sources. The individuals from the cabbage field, however, show no such excess of animal food as those just mentioned, the ratios standing for them at forty-one per cent. If we seek to account for this striking surplus shown by the second group, we shall find, in the first place, a difference of more than sixteen per cent. between the ratios of insects eaten by the first and second groups respectively,—a fact clearly due to the presence of canker-worms where the second group was collected. This species was eaten by sixteen of the seventy beetles, and composed about one-fifth of the contents of all the alimentary canals. This accounts, however, for only about half the difference noted, the remainder appearing in the larger ratios of other insects, of mollusks, of earth-worms, and of undetermined animal food.

This indicates either that other forms of animal life than the canker-worms were superabundant in the orchard, or else that the miscellaneous collections do not correctly represent the ordinary food of the Carabidæ. The truth probably lies between the two. The extraordinary wetness of the season, together with the amount of rubbish on the ground in the orchard, gave these beetles an unusual opportunity to capture slugs and earth-worms, and afforded excellent harborage for all sorts of insects. On the other hand, many of the beetles from other situations were preserved specially for dissection because the circumstances of their capture made it seem probable that they were feeding upon vegetation.

A careful study of the data indicates one interesting and important fact with regard to the preferences of this family, namely, that where an extraordinary abundance of any kind of animal food appeared, with a consequent increase in the percentage of that kind appropriated by the beetles, this increase was compensated, not by a decrease in the other animal elements, but in the ratios of vegetation only,—a fact which clearly shows that the preferences of the Carabidæ are for animal food. It should be noticed, however, that this argument does not apply to all the genera, as is seen, for example, by recalling the record of Anisodactylus. The ten specimens of this genus taken in the orchard had eaten much more vegetation than the nineteen from various other places.

Continuing the comparison of the three separate groups, we find that the beetles represented by the first, had taken insects to the amount of twenty-six per cent.; that those from the orchard had eaten about double this ratio; while those from the cabbage field fell a little short of it. This last fact is probably related to the time of the year when these beetles were taken,- the middle of April in a very late spring, when insect life in general was but just beginning to stir abroad. The ratios of Diptera, Coleoptera and Hemiptera, were but trivial in all these groups, and not worth separate mention. The extraordinary difficulty of determining the elements of the vegetable food from the minute fragments found in the stomachs of these beetles, makes it impossible to enter into much detail with respect to this. The miscellaneous collections, and those from the cabbage field, had found a little over half their food in the structures of plants, while those from the orchard had obtained from this source somewhat less than a quarter. Pollen of exogenous plants, which will be found to form so large a ratio of the food of the family next to be considered, appeared here only in three of the specimens, and amounted to but three per cent. of the entire food of the first group. These beetles fed much more largely on graminaceous plants, the recognizable tissues of which amounted to about seventeen per cent. in the first group, and eight in each of the special collections. Fungi were reckoned at about one-tenth of the food of the beetles included in the first collection, and only two per cent. of those from the orchard. The spores of the omnipresent Helminthosporium make the most important contribution to this element of the food, but a number of other genera were recognized.

A few words will suffice for a final discussion of the data relating to all the collections, from whatever source derived. As already remarked, a little over half the food of these one hundred and seventy-five specimens consisted of animal matter, about one-third being insects, while mollusks, earth-worms, myriapods and Arachnida make up the remainder.

All orders of insects are represented on the list, with the exception of Orthoptera and Neuroptera. The ratios of none of these are of any special importance, except that of the Lepidoptera, which stands at fifteen per cent. Hymenoptera and Diptera are each one per cent., and Coleoptera and Hemiptera each two. Among the Coleoptera, only Scarabæidæ and Telephoridæ were recognized; among the Hymenoptera only a single ant; and among the Hemiptera, plant-lice and chinch-bugs only. About half the vegetable food could be distinguished as exogenous or endogenous, the remainder being of too indefinite a character to be positively assigned to either class. As far as known, the endogenous food was more than twice as abundant as the exogenous, and consisted almost wholly of grass or grass-like plants. The fungi, which make somewhat more than a fourth of the food, require no further special mention.

If, discarding the ratios given above, we look only to the number of specimens in which the various food elements were detected, we reach similar results. One hundred and seventeen individuals of the one hundred and seventy-five examined had eaten animal food, and ninety-seven had taken vegetation. Insects were recognized in eighty-two, Lepidoptera in thirty-one (about one-half of which had eaten canker-worms), Diptera and Coleoptera in nine and four respectively, and Hemiptera in seven. Earth-worms were found in five, myriapods (Geophilus) in but one, and Arachnida (mites and spiders) in nine. Grass-like plants were taken by thirty-six, and fungi by twenty-nine.

Scanning the totals for each genus, a few results are noted which are worthy of special remark. First, we observe that at least two very abundant genera, represented by specimens enough to give us a fair probability that their average food is correctly exhibited, can hardly be classed as carnivorous insects at all, namely, Harpalus, with its nineteen specimens and twelve per cent. of animal food, and Anisodactylus, with its thirty-one specimens and twenty-one per cent. of the same. Amara and Amphasia should probably be placed in the same category, six specimens of the first and five of the second having taken but twenty-three per cent. and seven per cent., respectively, of food of animal origin. The excessively abundant Agonoderus ranks but little higher as a carnivorous insect, fifteen examples having derived only about one-third of their food from animal sources. On the other hand, twenty-three specimens of Chlænius and seventeen of Galerita had taken about nine-tenths of their food from insects, mites, myriapods and earth-worms. Thirteen specimens of Pterostichus had obtained three-fourths of theirs from similar sources, while Evarthrus and Calathus, represented by seven and six specimens respectively, had averaged ninety-three per cent. and sixty-seven per cent.

The fact has already been alluded to that the Carabidæ proper had eaten only animal food, and that nearly all this was of a fluid character.

Second, we find the Carabidæ dividing into at least three tolerably distinct groups as respects their food: first, those which seem usually to seize their prey and suck its juices, and take vegetation rarely, if at all; second, those which take a much larger ratio of animal food than of vegetable, but masticate and swallow it, as a rule, including indigestible fragments; and third, those whose habit is essentially vegetarian, but which still take solid animal food in diminished ratios. A fourth group, consisting of Lebia and its allies, is perhaps obscurely indicated by the facts relating to the three specimens of *Loxopeza atriventris* studied. This will probably be found to feed largely upon pollen and fungus spores, after the manner of the Coccinellidæ; and the fossorial Carabidæ will, perhaps, constitute a fifth.

If we look now to the structures of these beetles for some explanation of their differences of habit, we shall find corresponding variations in the form and structure of the mandibles. Where the mandibles are long and curved, and are destitute of basal molar processes, but are provided at or near the middle of the cutting edge with processes relatively long and sharp, the beetle seems to feed substantially upon soft or liquid animal food. If they are of medium length, somewhat slender, broad at base and tapering distally, with the tip acute, and provided with basal processes which are not especially prominent or sharp, the food is chiefly animal, but solid structures are masticated and swallowed, and some vegetation appears in the alimentary canal; while, finally, if they are short and quadrate, blunt at the tips, and provided either with strong basal processes or broad opposed surfaces, vegetable food is found to predominate. Calosoma is an example of the first of these classes, Chlænius of the second, and Anisodactylus of the third. The seeming exceptions to this generalization are found among those genera of which too few specimens have been studied to warrant general conclusions respecting their food.

THE LADY BUGS (*Coccinellidæ*).

This family shares with the preceding, the principal credit of limiting the increase of other insects, its fondness for plant-lice being well known.

Dr. LeBaron says of it in his excellent fourth report:

"The rounded or hemispherical form of these insects, commonly known by the name of lady-birds, and their dotted coloration, render them one of the most easily recognized of all the families of Coleoptera. Their three-jointed tarsi and the broad hatchet-shaped terminal joint of the maxillary palpi, are their most distinctive organic characters. The tarsal joints are always dilated and cushioned beneath, and the second joint is deeply bilobed.

These insects seem to be specially appropriated to keeping in check the extensive families of plant-lice, both the leaf-lice (*Aphides*), and the bark-lice (*Coccides*), upon which they feed voraciously, in both the imago and the larva states; and they are also known to devour the eggs of other insects. Mr. Westwood refers to some observations which go to show that they must sometimes subsist on vegetable food, and I have seen the *Coccinella* 15-*punctata*, Oliv., with its head deeply immersed in a ripe raspberry, implying that they sometimes feed upon the juices of ripe and succulent fruits; but such cases are rare and exceptional to their general habits.

The larvæ are oblong, blackish grubs, and are usually thickly beset with spines, which are also furnished with smaller spines or prickles, giving them, when magnified, a formidable appearance. These, as is the case with other larvæ, are much more voracious than the perfect insects."

The collections from which the present notes are derived, are from a variety of miscellaneous situations, and also from a cornfield mentioned in the notes on the food of the preceding family, in which chinch-bugs were superabundant, the purpose of the latter collection being to determine the food relations of the Coccinellidæ to those insects. It so happened that the same field was infested by the corn Aphis in great numbers, and the specimens obtained therein consequently illustrate to some extent the food of the lady-bugs in the presence of plant-lice. It was in this last situation only that larvæ were collected, and the facts here given consequently relate almost wholly to the adult beetles.

GENUS HIPPODAMIA.

Eleven specimens of *H. maculata*, taken in Northern, Central and Southern Illinois at various seasons of the year, from April to September, give an average of forty-six per cent. of animal food, all insects excepting a few mites eaten by three of the beetles, and amounting to only one per cent. of the food. The insect ratio, as far as recognized, with the exception of a single Podura, consisted wholly of plant-lice, which amounted to thirty-five per cent., while the fifty-four per cent. of vegetable food contained only pollen of plants and spores of lichens and fungi, the pollen and spores occurring in about equal quantities. The former was chiefly from flowers of grass and composite plants, about seven per cent. of the first and fifteen per cent. of the second.

Three specimens of this species, taken in the corn-field at Jacksonville, had eaten much smaller ratios of animal food, which amounted to only thirteen per cent., all insects. Traces of plant-lice were recognized, but no structures of chinch-bugs occurred. All but five per cent. of the vegetable food was derived from spores of fungi. Three per cent. of the spores of lichens, and two per cent. of the pollen of rag-weed and other Compositæ, complete the record.

Four examples of *H. convergens*, all taken at Normal in August and September, had eaten about the same amount of animal food as the preceding species (forty per cent.), but differed in the distribution of it by the fact that one of the specimens had eaten a myriapod (Geophilus), and that a caterpillar had been taken by another. Insects proper amounted to but twenty-five per cent., over half plant-lice. The vegetable food of this species stands at fifty-six per cent., as compared with fifty-four of the preceding, and the ratios under this head are very similar to those just given for the other species. Pollen of Compositæ (dandelion) makes thirteen per cent., that of grass makes five per cent., spores of lichens two, and those of fungi thirty-three per cent.

Five adults, taken at Jacksonville, were found to have made about one-third of their food of insects, equally divided between plant-lice and chinch-bugs, each eaten by one of the beetles. The vegetation consisted, as usual, of pollen of Compositæ (eleven per cent.), spores of lichens (two per cent.), and of fungi (seventy-one per cent.)

Two larvæ of this species, taken at the same place and time, differed but little in food, to my surprise, from the adults just mentioned. Chinch-bugs and plant-lice in about equal ratios, with traces of unrecognizable insects, amount to twenty-three per cent. Pollen of Compositæ stands at five per cent., lichen spores at seven, and spores of fungi at sixty-five.

H. glacialis was represented by four specimens, taken in the corn-field. The differences between their food and that of *H. convergens* were purely trivial. Insects amount to thirty per cent., all chinch-bugs and plant-lice, twelve per cent. of the former and eighteen of the latter. The seventy per cent. of vegetable food is divided about as before, between pollen of Compositæ seven per cent., and spores of fungi fifty-one per cent. Lichen spores were taken more freely, however, and were estimated at twelve per cent., eaten by all the beetles.

GENUS COCCINELLA.

Six specimens of this genus were studied, three of *C. 9-notata*, and three of *C. 5-notata*. All were from Central Illinois except one, which was from Jacksonville. Excluding the last, the ratio of animal food eaten by these specimens was not far from two-thirds of the total, all plant-lice. Only a trace of pollen of Compositæ was noticed in one of the insects. Fungus spores amounted to thirty two per cent., (about half Helminthosporium and Ustilago), and lichen spores to four per cent. The Jacksonville specimen had eaten only fungi.

GENUS CYCLONEDA.

In the corn-field with the chinch-bugs, three specimens of *C. sanguinea* were collected, which had eaten plant-lice, pollen of Compositæ, lichen spores and spores of fungi. The first made about one-third of their food, the pollen grains were estimated at nearly half, and lichen spores at three per cent. The eighteen per cent. of fungi were of the usual character.

THE FAMILY AS A UNIT.

A summary and comparison of the food of these two groups, taken singly without reference to their genera, develops some interesting and unexpected facts. Although the corn-field in which the second collection was made was teeming with insects of the kinds especially tempting to the Coccinellidæ, and although these beetles themselves were there in truly surprising numbers, it is not easy to believe, considering the tables upon which this discussion is based, that the Coccinellidæ were attracted to the field by the abundance of insects available for their food. The beetles of the first group are seen to have eaten nearly twice as many insects as those from the field of corn, while the fungi eaten were as thirty-six to fifty-six respectively. Only eighteen specimens were dissected, out of the large number collected in the corn-field, but the contents of their stomachs were of so uniform a character that there was every reason to suppose that they illustrated correctly the food of the family at that time and place. It would therefore seem possible that these beetles were attracted rather by the stores of fungi in the field, than by the chinch-bugs and Aphides. The condition of the leaves and stalks of the corn, drained and deadened by insect depredations, was such as to afford an excellent nidus for the development of those fungi which spring up everywhere spontaneously upon dead and decaying vegetation, and these were in fact extremely abundant. An alternative explanation is perhaps more probable. The condition of the field gave abundant evidence that the plant-lice had been very much more numerous some time before; and it is possible that, as a consequence of this decrease of food, and the increase of the Coccinellidæ themselves, the latter had reached an excessive number, for which the supply of plant-lice was really insufficient, and that for this reason they had resorted to fungi.

The chinch-bugs taken by the specimens of the second group amounted to only eight per cent. of their entire food, and plant-lice to fourteen per cent.—less than half those taken by the other specimens, which stand at thirty-six per cent. The pollen eaten by each group was thirteen per cent.—the same in both. If we combine the two collections, and treat the thirty-nine specimens of both as a whole, we find that insect food is about a third of the entire amount, and that the other animal elements are only trivial. The function of the beetles of this family of limiting the multiplication of plant-lice is expressed by the fact that these insects compose a fourth of the food of this entire collection. The pollen of grasses and Compositæ make fourteen per cent., the spores of lichens four per cent., and those of fungi nearly half the whole (forty-five per cent.)-

SUFFICIENCY OF DATA.

The food of the Coccinellidæ seems to be, on the whole, remarkably simple and uniform, consisting wholly of spores of the lower cryptogams, pollen grains, and plant-lice, and varying but little from one genus to another. This similarity is likewise reflected in the mouth parts, which agree as closely in form and structure as do the ratios of the food. I have consequently little doubt that the data derived from the thirty-nine specimens here discussed, will be found sufficient for a correct general idea of the food of the family under ordinary circumstances.

With respect to the Carabidæ, we have other proof. In a brief paper published by me in 1880, in Bulletin No. 3, Illinois State Laboratory of Natural History, based on an examination of only twenty-eight specimens belonging to seventeen species, the conclusion was announced that about one-half of the food of this family consisted of vegetation, and one-third of insects; and the vegetation was thought to be about equally divided between cryptogams, grasses and exogens. If these figures or those of the present paper were far wrong, the probabilities would by very slight indeed that the two estimates would agree, especially as no comparison whatever was made of the two sets of data, until the tables were completed in their present form. When, therefore, we find that the one hundred and seventy-five specimens of the present paper, belonging to thirty-eight species, were estimated to have taken fifty-seven per cent. of animal food, and thirty-six of insects, and that the ratios of cryptogams, graminaceous plants and exogens are respectively five, eleven, and five, we must conclude that the above figures are a fair average of the ordinary food of the family.

Recurring now and finally to the questions propounded at the commencement of this paper,* we have to note the replies which the facts collected enable us to make.

As far as the Carabidæ are concerned, the answer must vary according to the genus and species—some being so far vegetarian in habit that their function as checks upon insect life is only trivial in importance. Respecting those which are to be properly classed as insectivorous, it is plain from the foregoing data that a very sensible effect must be produced upon already existing oscillations. So many species were found eating a great excess of caterpillars in the orchard where canker-worms abounded, that we cannot doubt that they had been tempted from their usual regimen by the superabundance of this one element. The fact that several of these species are ordinarily dependent in part upon vegetable food is not to be placed to their discredit, but, on the contrary, rather increases their efficiency as checks upon insect oscillations. The numbers of any species strictly dependent upon insects for food must, of course, rise and fall with the numbers of the species upon which it preys, or indeed a little after them. There consequently can never be any *surplus* of such species maintained for the suppression of arising outbreak among the injurious insects. If, on the other hand, our carnivorous beetles can sustain themselves during a deficiency of insect food by resorting to vegetation, a large surplus may be held ready for instant attack upon any injurious insect which commences to appear in unusual numbers.

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* P. 105.

This argument applies with special force to the Coccinellidæ, which have been shown to feed so largely upon the omnipresent and everywhere abundant moulds and blights of vegetation.*

We are thus brought to see the points of evident superiority of the insectivorous beetles over the parasitic Hymenoptera. The latter must share in all the ups and downs of the host species, and can only be of service in finally putting a period to uprisings already well under way. In fact, there is considerable reason to suspect that these strictly dependent parasites often *cause* the oscillations which they afterwards have the credit of *suppressing;* and it is a very significant fact, in this connection, that the most irregular and destructive insects are, as a rule, the worst ridden by parasites.

When the army-worm, for example, commences to throng the fields in hordes, an extraordinary opportunity is afforded its parasitic enemies to multiply, and this increase in their numbers necessarily proceeds at a geometrical ratio, until it is arrested by a resulting serious diminution in the numbers of the worms themselves. The parasites must thus necessarily far outstrip their hosts for a time, and, as a consequence, eventually reduce them to insignificance. But with the disappearance of the latter the parasites must suffer in turn; and so an unending alternation goes on, needing no other explanation in many cases than the superabundance of parasites.

With respect to the families treated in this paper, however, we have not a particle of evidence upon which to rest such a charge; but everything indicates that their services to agriculture are rendered at no more expense than the trivial injuries to vegetation for which a few of them are responsible.

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* The discovery of this fact opens the way for some interesting and promising experiment. If any class of predaceous insects can be bred artificially to advantage, it is probably the Coccinellidæ, since the above kinds of food could be furnished them in unlimited quantities, at trivial expense. It remains to be seen, however, whether they could reproduce without animal food.

APPENDIX.

THE LOMBARDY POPLAR BORER.

(*Agrilus granulatus*, Say.)

Order COLEOPTERA. Family BUPRESTIDÆ.

By PROF. T. J. BURRILL.

It is known by every one that the Lombardy poplar lives but a short time in the rich soils of the Mississippi valley, where its growth is exceedingly rapid. Many suppose that this is due to some degeneration, through the processes of propagation or otherwise, of the constitutional vitality of the tree,—that it is inherently short-lived.

After some studies upon this subject, I am quite sure, that the early death of the tree comes from other causes, and is due to agencies outside the tree itself and not specially connected with the soil or climate. For the present note, one of these, and only one, may be mentioned.

About the middle of June a small beetle (*Agrilus granulatus*, Say) lays its eggs in the crevices of the rough bark, depositing them singly here and there, but sometimes only an inch or two apart, on the trunk and limbs old enough to become roughened by the fissures and cracks of the outer bark. The larvæ penetrate the living bark and gnaw tortuous galleries in it and the young layer of wood just beneath. These galleries are at first as fine as the puncture of a cambric needle, and never become larger than one-tenth of an inch in diameter. For the most part they run in irregularly horizontal directions, or crosswise of the grain of the wood. When numerous, as they often are, they sometimes cross each other, but this is uncommon. They are closely packed with the excrement of the larvæ.

The latter are exceedingly slender, slightly flattened, much elongated, footless and white; the first segment of the thorax is somewhat enlarged, and the minute but sharp jaws apparently project from its front. In October they bore obliquely into the deeper layers of the wood, often one to two inches from the surface, and then usually follow the grain up or down some inches, and turn obliquely outward until within about an eighth of an inch of the surface wood, though this distance varies much. The last inch or thereabouts of the burrow is greatly widened and ends with an obliquely rounded termination. The long, slender larva, towards the last of this month and throughout the autumn and winter following, may be found in the enlarged portions of its burrow with its head and the first third of its body closely bent backward on the remaining two-thirds of the length, and in this folded form filling the cavity gnawed for itself in the wood. The bend of the body is always sideways, and usually to the left.

About the middle of May the larvæ transform, and the pupæ are found with their heads occupying the position of the fold just mentioned and next to the rounded end of the burrow. The ventral side is always outward, that is, toward the surface of the tree. Two weeks or thereabouts later the pupæ become perfect beetles, and· about the first to the middle of June escape by gnawing outward, making in so doing a very different cut from that previously made by the larvæ. Seen from without, the hole is doubly convex, the curvatures being quite unequal, and meeting at a sharp or slightly rounded angle on either side. As the insect emerges, its back is pressed against the strongly convex side of the excavation.

The beetle is about half an inch long, slender and sluggish. It makes little or no effort to avoid capture, which is easily enough done. It appears to pass the night at rest in crevices, etc., and moves about only during sunny weather. Eggs are deposited within a few days after the mature beetle gains its freedom. It is thus described by Say: "Body cylindrical, olive-green, granulated; head punctured, with a profound sinus each side for the reception of the antennæ, tip rounded; eyes whitish, with a black, oblong, moveable pupil; thorax with an oblique indented line each side, and a longitudinal dorsal one; basal edge sinuated; scutel transversely elongated, with an impressed transverse line behind; elytra scabrous or granulated, without striæ or punctures; an elevated longitudinal line, and an indented large spot at base; tip serro-dentate. Length two-fifths of an inch, nearly. This species has three hardly visible fulvous spots on the elytra; one on the depressed base, one near the suture before the middle, and one behind the middle, also near the suture. I have a specimen in which these spots are not at all visible. The elevated line at the posterior angles of the thorax is short, but very obvious."

THE PHYTOPTI AND OTHER INJURIOUS PLANT MITES.*

BY H. GARMAN.

The injuries to plants by mites are commonly underestimated. Mites are so small that their presence is often not perceived until the injury has been done, and we sometimes look for the cause only to find the empty skins left by our minute enemies. The fact that injuries from this source usually give the plants the appearance of being diseased, while there are none of the ordinary marks of their having been attacked by insects, has led to some dispute as to the part mites take in bringing about the diseased appearance. The testimony of the more intelligent gardeners and horticulturists, both of Europe and the United States, and of those who have given the subject special study, should bear a good deal of weight, and upon its authority mites are not only injurious to plants, but in some cases do "enormous" damage. Plant-feeding mites have long been known in Europe as committing depredations on some of the most useful garden and hot-house plants. In all, several hundred plants have been enumerated which are subject to their injuries. In the United States, also, the same or similar species of mites attack some of our valuable garden plants and trees. Very many of our native plants are also infested; and when the mites and the nature of their work are better known, I have little doubt that we shall find as many injurious species at least as occur in Europe, and that loss from supposed blight or killing by frost will in many cases be traced to the mites.

Of damage done by mites in Europe, we have an abundance of evidence. The linden is badly injured some years on the continent by the red spider, one of the spinning mites, which swarms upon the leaves. The same or a related species is very injurious in the hot-houses about Paris; and another, according to an English entomologist, "causes enormous damage, in dry seasons, to the hop crops." The currant, pear, peach, vine, rose, and many others of the most valued trees and shrubs, we are told, are badly damaged at times.

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* The present is merely preliminary to a more extended paper on the plant mites, which the writer hopes to prepare. I wish here to acknowledge my obligations to Prof. S. A. FORBES for his kindness in translating BRIOSI's article on the Phytoptus of the Vine or me, and in securing for my use many of the papers on Phytopti and their cecidii.

Giovanni Briosi, an Italian naturalist, after a thorough investigation of the disease of the vine of Europe, says that where the galls produced by the mites are very numerous, the development of the fruit-buds is stopped.

Landois, a German investigator, declares that the injuries to the vine from mites are quite as serious as those of the well-known *Oidium tuckeri*, a parasitic fungus which devastates vineyards.

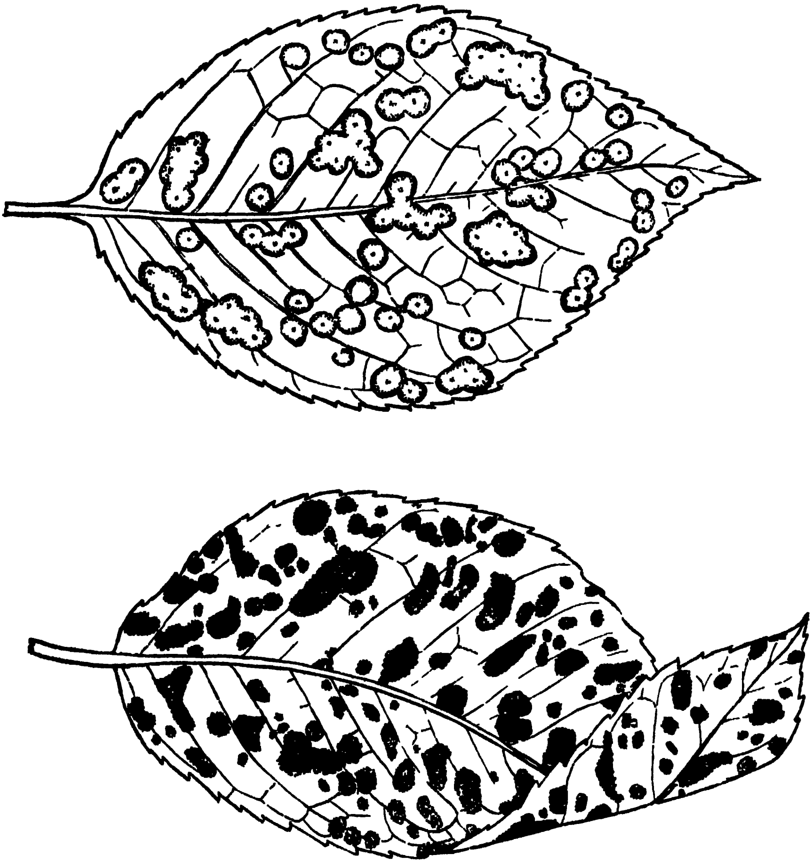
In our own country, injuries are also reported by florists and gardeners, and one of our great staples, cotton, is infested by a mite apparently belonging to the same genus as the injurious spinning mites of Europe. Of this mite, the former Entomologist to the Agricultural Department at Washington says, in one of his reports: "Much injury is done to the cotton leaf by a minute red spider, which presents very much the appearance of incipient rust, except that the leaf is of a more rust-brown in spots, instead of the bright yellow of the real rust. This red spider principally attacks the under side of the leaf, the spots caused by its punctures turning brown, and finally increasing until it is completely stung all over, and falls from the plant. This family of the mites (*Acari*) do much injury to vegetable life, as they are so extremely minute as to escape the notice of the superficial observer. Red spiders also injure the rose, strawberry and vine, and seem to be very generally destructive to vegetation."

The *Prairie Farmer* for July, 1877, gives a paragraph relating to their injuries, which will not be out of place in this connection:

"These [red spiders] are the most deadly enemies of our floral pets which we have to contend with. * * * These insects are so minute as to be scarcely visible to the naked eye, and often commit extensive ravages before the source of the mischief is discovered."

The rust of the orange has been discovered by Mr. Wm. H. Ashmead, of Jacksonville, Florida, to be due to a mite which he names *Phytoptus oleivorus*. Of the work of this mite, Mr. Ashmead says:

"The damage done is considerable, amounting to many thousand dollars in the course of a year. The rust is due mainly to the puncturing and exudations of the mites, millions of which are to be found on a single orange tree, frequently covering the oranges and leaves in the form of an impalpable yellowish dust."



Figs 24 *and* 25.—Leaves of the pear tree, showing two stages of the galls produced by *Phytoptus pyri* (after Sorauer). H Garman, del.

The pear-leaf blister (Figs. 00 and 00,) is the result of a disease which is widely known, but not commonly understood to be due to the ravages of mites. Such is, however, the fact, as is now well known to foreign horticulturists. Recently, Prof. T. J. Burrill has discovered mites in blistered pear leaves in this State, and tells us that they are identical with the European *Phytoptus pyri*[*], a species which he thinks has been introduced with imported pear trees. In an account of this malady, which he has kindly furnished me (see *Phytoptus pyri*, Scheuten, at the end of this paper), he says, regarding the effect of this mite's work upon the pear trees :

"Trees are not killed outright, but much injury is done by this work upon the leaves; sometimes, also, the much more deadly 'blight' shoots from the minute wounds made by the mites. A tree badly affected by the little blister-makers presents a pitiful appearance, with its speckled or spotted leaves and its stunted growth. The fruit, if any, is poor in size and quality, and there is evidence every way of the slow mischief accomplished."

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[*] Since the above was written, I chanced upon a reference to the work of this mite on our pear trees, in the report for 1872 of the U. S. Entomologist.

It has been supposed by some that plants must be diseased before insects will attack them, but Boisduval has shown that such is not the case. Plants in perfect health may be infected and injured by placing them with those already attacked, or by bringing infested plants among them. That strong and actively growing plants sometimes do not appear to be affected by mite attacks, is what we should expect, and is not necessarily evidence that mites have not inflicted injuries upon them. In the case of the healthy plant, the growth may overbalance the injuries, and the latter not be noticeable, while in the unhealthy plant, the injury is more liable to overbalance the gain to the plant by growth, and so attracts our attention. Moreover, as in the case of the attacks of the chinch-bug upon corn, seasons most favorable to the development of plant-feeding mites are, as a rule, least favorable to vegetation, and their attacks are, in consequence, all the more dangerous.

The plant-feeding mites may be roughly divided into two groups: those which live exposed upon the plant, and those which cause abnormal growths on the leaves or stems, which afford them shelter. To the first group belong the spinning mites, Tetranychi, and those of this group best known for their injuries belong to the genus Tetranychus. These mites are commonly known as red spiders, from their prevailing color and their habit of spinning a fine web on the surface of the leaves they infest; but they are true mites, differing from spiders in their minute size and in the character of their mouth parts. They work on the under side of the leaves, and may be there found in great numbers on badly injured plants. To the second group belong what are known as gall-mites (Phytopti) from the galls and growths of hair which their attacks cause to appear. They are best known from their galls, and the injuries they inflict, since the mites themselves are so small that even when abundant they escape detection. By opening one of the galls and washing it out in a little water, the mites will appear as small whitish particles floating on the surface. Under favorable conditions they become so numerous that they leave their galls and collect upon plants in such quantities as to resemble a powdery coating on the leaves and twigs.

Mites injure plants partly by puncturing them with their needle-shaped maxillæ, (of which each mite has a pair), and sucking the juices of the plants, but quite as seriously also by interfering with the respiratory and assimilative processes in which the leaves are engaged. From this double injury the healthy green color of the leaves is exchanged for a sickly yellow hue, or brown spots appear at the points attacked, and by spreading and fusing, give a prevailing brown color to the leaves. The disease, so-called, is known as *acariasis*; if the injury has been done by the gall-mites, it may be called *phytoptosis*; the former term comprehends the latter, and answers all the requirements of convenience.

With the second group of injurious mites this paper has chiefly to do. The peculiar deformities to which many of them give rise were placed by the earlier botanists among fungi, chiefly in the genera Erineum and Phyllerium, and the disease at that time was called *eriniosis*. In 1737 a French naturalist, Réaumur, found, in an abnormal growth on the linden, a minute worm-like animal, which he thought gave rise to the abnormal formations on the leaves. This animal was determined, by a later French entomologist (Duges) to be a mite, and it received from him the generic name Phytoptus, from its plant-infesting habits. Since then, others of these growths have been traced to their causes, and at present a long list of plants may be given, each of which has its peculiar Phytoptus. The growths are now called by specialists, *cecidii*, or, more exactly, *acaro-cecidii*.

The growths to which the Phytopti give rise are not always what would be called galls; and in some cases they do not produce growths of any kind, but live in the buds in such numbers that the latter never develop, but remain blackened and swollen. Besides swellings of the leaf substance called galls, the attacks of some of these mites give rise to dense mats of twisted hairs on the under side of leaves; and in the midst of these groves the mites live and propogate. These hairs differ very little in character from the ordinary hairs of the plant, being sometimes single and again many-celled, but the occurrence in dense groves and the frequent strange forms which they assume will ordinarily distinguish them from the normal hairs of the plant. Some of the forms of these hairs may be worth indicating. A common one is what may be called club-shaped, the hair being slender towards the leaf, and expanding slightly towards the extremity. Others of the hairs expand more abruptly outwards, and are quite short, being thus knob like. Occasionally one occurs that gives off a lateral shoot, and often most of the hairs constituting a grove are irregularly twisted. The usual form is, however, very nearly that of the scattered hairs which may be found on other parts of the plant. The patches of these hairs are at first white, but when old assume a rusty-brown color very like that of some of the fungi known as rusts. At this stage few mites will be found in the growths, the brown color of the hairs being due to their having been exhausted and dried up.

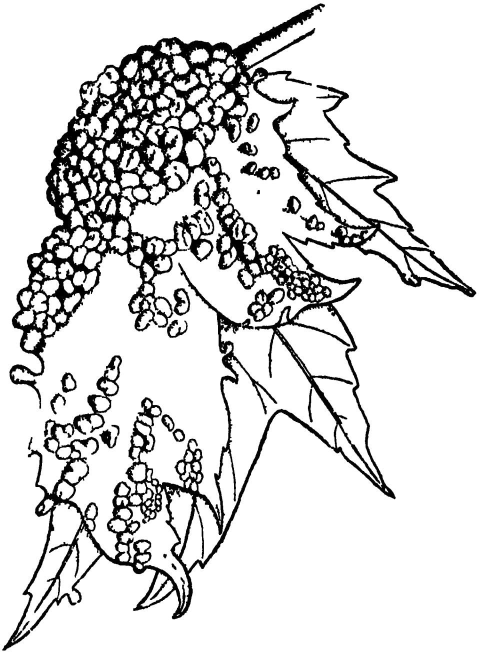

Figure 26.—Leaf of the soft-maple (*Acer dasycarpum*), showing the galls produced by *Phytoptus quadripes*. H Garman, del.

The galls are quite as peculiar as the hairs, and assume the greatest variety of forms. On the same plant this variation is not wide, although there is great irregularity in outline and in size. They may be distinguished from similar galls produced by dipterous insects in that they always have an opening by means of which the mites can pass in and out. This opening is usually on the under side of the leaf, and consists of a narrow slit or puckered orifice, frequently almost obliterated by the closing together of the margins, or concealed by a tuft of hairs similar to those described as forming mats on the exposed surfaces of the leaves.

They consist of portions of the leaf which an unusually rapid growth has caused to swell upward, thus forming a little pouch in which the mites live. Since the attack is begun on the under side of the leaf, these pouches project from the upper surface and have the opening below. They stand up from the leaf like ten-pins or tops, or form wart-like excrescences, in some of which the projection is equal on both sides of the leaf. The size will average in the neighborhood of a tenth of an inch. The outer surface may be clothed with scattered hairs, smooth, or irregularly wrinkled, or pitted. The colors change with age and differ with the plants. At first most of them are like the leaves on which they grow in color, later becoming purple, yellow or some shade of brown, and finally blackening and drying up.

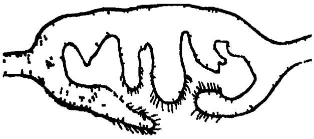

Fig. 27. Vertical section of a Phytoptus gall from a leaf of the green ash. (*Fraxinus viridis*).

The interior surface of a mite gall is rarely as smooth as in other galls, but is roughened by irregular folds and processes, and is sometimes clothed with hairs. The latter are in some galls confined to the folds and processes. Besides the purse-like galls, and the growths of hairs, there is a third abnormal formation on some plants which is produced by Phytopti. It consists of a simple fold of the leaf not due apparently to any unusually rapid local growth, but such as could be straightened out again did the leaf admit of a sufficiently vigorous pull. On our long-leaved willow, such a cecidium occurs. It extends the entire length of the leaf, and ordinarily there is one on each side of the midrib. Dr. F. A. W. Thomas describes a similar cecidium which occurs on the European *Lonicera nigra*, and extends around the entire margin of the leaf. The fourth kind of cecidium is formed by the crowded masses of minute leaves and twigs whose development has been arested by the depredations of the mites.

Formerly galls were thought to be due to a deposit of a liquid poison by insects. At present it is pretty generally believed that they are caused by purely mechanical irritation. Briosi explains the formation of the mite-gall of the vine very simply and satisfactorily. He thinks that the puncturing of the cells of the leaves causes an increased flow of sap in the direction of the injured part, the result of which is that this gets an unusual supply of growth material, and the cells multiply more rapidly than those of the surrounding tissue. To make room for this additional tissue, the leaf swells upward, leaving a hollow below which is closed in by the subsequent growth of the leaf. A series of cecidii may be selected from plants which will illustrate the different stages in the development of one of the purse-shaped galls. There is a cecidium on the leaves of the box elder which consists of a dense cluster of hairs in a concavity on the under side of the leaf. The position of these clusters of hairs is indicated above by a slight convexity differing in no wise in texture or color from the surrounding portions of the leaf. On the oaks is another cecidium which is slightly more convex above than the preceding, and finally becomes brown. This represents a second stage. The third stage may be illustrated by galls on the heart-leaved willow. In these galls the opening below is pretty well closed and the outer surface is pitted and wrinkled. The fourth and last stage may be represented by the galls on the maple, as in them the openings are almost obliterated.

The galls appear with the unfolding leaves in the spring. At the earliest stage at which the leaves of the soft maple can be examined, minute swellings are found on them indicating the site of the future galls. They grow with the leaf, and by the time it has fully expanded, have completed their growth. No galls appear on fully developed leaves, so that if a leaf once gets its growth, it is safe from attack; but when the Phytopti which cause the first galls increase to such an extent as to make a migration necessary, they pass along the branches to the terminal twigs, and may there produce new galls on the unfolding leaves of the growing tips. This accounts for the unequal distribution of the galls on the leaves of the plants; they are very rarely uniformly abundant on the whole leafage. Young trees seem to be more liable to be galled than older ones, and plants which are heavily shaded or otherwise unfavorably situated seem to prove more attractive to the mites than those which get a due amount of sunlight and rain. Several hundred of the galls may occur on a single leaf, and sometimes there are few leaves on a plant which are not galled.

THE MITES.

Among the many strange forms of Acarina, none have proved more puzzling to entomologists than the members of the genus Phytoptus. In this case, the extremely small size of the animals has been an additional hindrance to an understanding of their structure, and, added to their abnormal form (abnormal even to the class in which they belong), has led to much confusion and uncertainty as to their relations to other mites. There seems, however, to be no longer reason for doubting that Phytoptus is an adult mite, capable of laying eggs and reproducing its kind. I believe none of those who have considered Phytopti the larvæ of other mites claim to have actually observed the transformation of one into the other, or, indeed, to have made anything like a careful and scientific demonstration of what they give as the genealogy of these mites; and as several competent observers have recently seen the ova, and one of them even the act of oviposition, we cannot longer withhold from Felix Dujardin the credit of having been right, when in 1851 he claimed that he had seen ova within the body of Phytopti, and that they must therefore be adult mites, notwithstanding their having but two pairs of legs. We may therefore define Phytoptus as a genus of mites with two pairs of legs composed of five articles each, and terminated by a claw and feather-like organ, as possessing a tubular rostrum, including a pair of slender maxillæ, and with a long, transversely-striate abdomen, terminating in a protractile sucker.

The minuteness of Phytopti is such that a microscope is necessary in studying them. They are invisible to the untrained eye,—and even after being searched out with a lens, can only be seen, with the closest scrutiny, as minute, whitish specks. The length varies, in specimens I have seen, from .008 to .004 inch. The species differ so little, that quite a detailed description of one applies equally well for all the members of the genus. They are cylindrical, semi-transparent, with a disportionately long abdomen, and very short cephalothorax. The latter constitutes not more than a fourth of the entire length of the mite, is smooth and shining, and continues forward without interruption into the rostrum. The rostrum is little else than a hollow snout, cut off squarely at the tip and slit open longitudinally below. In other mites a partial rostrum is formed by the union of the bases of the mouth-parts with the labrum, the terminal (distal) part of the organs remaining free. In Phytoptus the fusion is carried further, and the chelipeds are lost in the rostrum. Apparent joints may sometimes be seen just where the chelipeds should be situated, but they are probably constrictions, due to the downward curvature of the rostrum. The organs with which the leaves are punctured are two long, slender cheliceræ, which lie in the hollow snout, and extend beyond the tip of the latter when in use. The lower lip is a triangular body attached beneath and at the base of the snout, covering the beginning of the longitudinal slit. Briosi says that it may be extended forward so as to close the slit when the snout is applied to the leaves for the purpose of sucking the sap. The adult Phytoptus has only *four legs.* With two or three exceptions, adult mites of other kinds have eight legs, and their larvæ never have less than six. Phytoptus is thus an exception to the rule, in this respect.

The developed limbs consist of five articles, with an appearance of two others; the first is stout and extends but little beyond the side. At its extremity is a fold, which resembles a short article between the first and second. The second is longest and stoutest of all. In the first pair of legs, a short hair arises from the under side of this article, and in both pairs a long hair arises at its apex above, and extends on over the succeeding articles. Then follow two articles, the second (distal) of which bears a constriction at about its middle, which gives it the appearance of two segments. From the last article a long hair arises and extends forward over the tarsus. The tarsus consists of a curved, cylindrical claw, slightly swollen at its tip. Beneath it is the so-called feather-like organ, consisting of a slender axis with a series of barbs arising from each side. The long abdomen is transversely striate, the regular striæ separating its surface into narrow rings, which completely encircle the body. These rings or interspaces are covered with a series of minute tubercles, only visible when highly magnified. The extremity of the abdomen is a sucker, which can be freely protracted and withdrawn.

The genital opening is situated just behind the margin of the cephalothorax on the under side, and is covered by a shield-shaped flap. A few slender hairs arise from the abdomen, and as they are quite constant in position, should be mentioned. There are three pairs of these above and three below. The first of the upper pairs is long, and arises at the margin of the cephalothorax; the second pair is the longest of all, being in some species a third of the whole length, arises from the last interspace, and extends posteriorly. Between them is the shortest pair of all, (frequently overlooked). In a species having 80 striæ I find the most anterior of the ventral pairs of hairs twelve, and the median twenty-four striæ behind the cephalothorax, and the third pair six striæ in advance of the sucker.

The internal anatomy of Phytoptus needs further study. The alimentary canal has not yet been traced through all its course. The ovary, when distended with ova, occupies nearly all of the abdominal cavity, extending from the opening near the margin of the cephalothorax backwards nearly to the tip of the abdomen. The ova are comparatively very large, and lie in a single series of about six. Those farthest forward, and thus nearest the genital opening, are always largest and farthest developed. The anterior two or three show distinctly the granular character of their contents, and differ little from eggs which have been laid. Towards the hind end of the body the eggs become gradually smaller, and their contents are not granular. Only a few years ago Phytopti were generally believed to be the larvæ of other mites, and the statements of those authors who claimed to have seen the eggs in their bodies, were not credited. But with the recent improvements in microscopes, there is no reason why any one may not convince himself that the bodies described by Dujardin are really eggs. Scores of specimens of the Phytoptus which produces galls on the leaves of our soft maple may be secured in June, in which the eggs with nuclei and nucleoli may be seen with perfect distinctness.

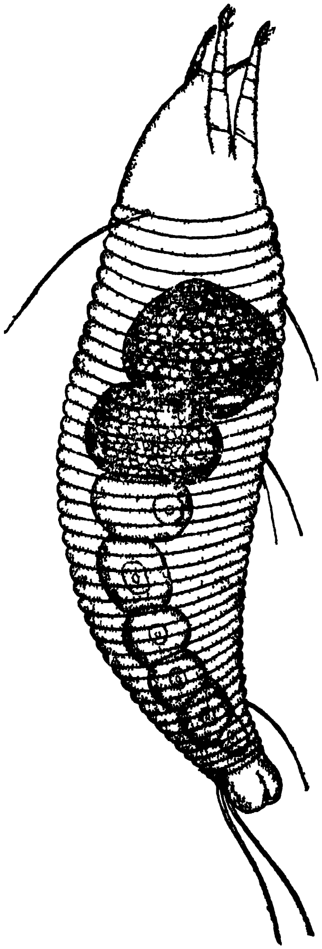

Fig. 28—Phytoptus quadripes, Shimer. Side view showing the eggs within the body. From a camera lucida sketch. H. Garman, del.

Figure 28 is a faithful representation of one of these mites, taken from a camera lucida sketch. The walls of the ovary are so delicate that they could not be traced to the outlet, but on several occasions I have seen the anterior ovum forced through this opening by the pressure of the cover-glass.

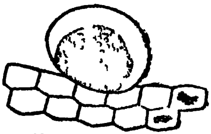

Figure 29.—Egg of *Phytoptus quadripes*, as seen attached to the inside of galls on the leaves of the soft maple (*Acer dasycarpum*).

The eggs are attached singly to the walls and hairs of the cecidii. They are slightly depressed, nearly spherical, and those I have seen were light yellow in color. Two examples of these eggs from the green ash measure .001 inch in diametef, and one from soft maple .002 inch in diameter. The developing mite may be seen in some of the eggs, and in one of those observed by the writer, the two pairs of legs and the abdominal striæ appeared much as in adults.

The young mite, fresh from the egg, is very helpless. Several molts of the skin take place before it is mature, and many of these molting young may be found by washing out a cecidium during their period of most active growth. At each molt there is a period of inactivity, during which the mites lie encased in the loose old skin. Landois claims to have observed four molts, the first occurring just after the mites leave the eggs, when the tarsal appendage appears; at the second there is only an increase in size; while at the third, the first and at the fourth, the second pair of foot stumps appears. One of the smallest young I have seen measured .003 inch in length, the adult from the same cecidium measured .008 inch in length.

HABITS.

The mites move about quite rapidly, when their size is taken into consideration, depending mainly upon the short legs for locomotion. Briosi says that they also move in the same manner as the larvæ of Phalænidæ, the terminal sucker playing the part of the false feet. I have not witnessed this movement, but can easily believe them able to move as he describes. The sucker seems to me to be used chiefly in clinging; and is doubtless of service to the mites in preventing the weight of the long abdomen from pulling them from the under side of the leaves upon which they may be creeping. While watching the mites at home in a nook of a gall or bud, I have sometimes seen them attach themselves by the sucker and swing the body about into a new position. The sucker takes hold on whatever it touches, and the mites themselves are sometimes seized upon by their neighbors and dragged about by it. Phytopti hibernate in the perfect state during the winter, and while some of them may descend to the ground for that purpose, as is supposed by Dr. Shimer and others, all of them certainly do not do so; for I have been able to obtain mature and active specimens from twigs at any time during the winter by bringing them into a warm room, and at times from a temperature but little above zero, F.

SPECIES.

While I am alive to the possibility that a species of Phytoptus may have a wide range of plant food, and produce very different

—9

galls, according to the plant upon which it establishes itself, or that a species may even vary with the plants on which it lives, it has seemed to me, all things considered, best to affix names to some of the forms which I have noticed. I find that the size of the adults, the number of transverse striæ about the body, the number of prongs of the feather-like tarsal appendage, and in some measure the form of the body, afford what seem to be characters of specific value. Color may also in some cases be characteristic, but I find little variation in that respect. In the United States but three species have hitherto been indicated by name, one by Dr. Henry Shimer, another by Prof. T. J. Burrill, and the third by Mr. Wm. H. Ashmead. Prof. Burrill considers the species observed by him to be specifically identical with the *Phytoptus pyri* of Europe (the mite which causes the pear-leaf blister). The mites and galls described below comprise but a small portion of those which occur in this country, or even in that part of Illinois in which most of them were found. Others have been noticed from time to time, when the work upon which the writer was engaged would not permit his giving them attention. I can say for the South Atlantic and Middle States that these mites are decidedly common there, and I have little doubt that the Phytoptus galls of the United States will number several hundreds.

Phytoptus abnormis, n. sp.

Produces galls on the leaves of the American linden or basswood, *Tilia americana*, Linn.

The transverse striæ of the abdomen number about 56. This mite differs from all the other Phytopti I have seen in that the abdomen, just before the terminal sucker, is noticeably enlarged. But few specimens have been examined, as they have been very rare. In many of the galls, comparatively large, elongate eggs occur, which probably belong to some larger mite which preys on the gall-mites.

The gall is top-shaped, expanding above and contracting towards the upper surface of the leaves into a neck. It measures .155 inch in height, and .100 inch in diameter. The walls are deeply infolded, sometimes giving rise to unequal lobes. The outer surface is smooth, green and devoid of hairs. The cavity of the gall is made unsymmetrical by the deeper impressions of the wall. The inside of the latter is slightly roughened by small folds, and is clothed with long aciculate, unicellular hairs. These galls occur sparingly on the leaves of large trees in open woods at Bloomington, Illinois.

Phytoptus, sp.

Produces galls on the leaves of the poison ivy, *Rhus toxicodendron* Linn.

The gall of this species is a small rounded elevation on the upper side of the leaf, having the usual opening below. It frequently covers the greater part of the upper surface; and in such cases the individual cecidii fuse and form granulate heaps, with a common opening below. On some of the leaves the galls are purple and pubescent, on others they are yellowish-green, and have very little pubescence. The inside is clothed with white hairs. Galls of this kind were abundant on the poison ivy at Normal, Illinois, in June, 1881. A single mite was observed.

Phytoptus acericola, n. sp.

Produces galls on the leaves of the sugar maple, *Acer saccharinum*, Wang.

In five examples of this mite the striæ were counted, and in three of them numbered 30 and in the other two, 28 and 29, respectively. The prongs of the feather-like appendage seem to be three. The length is about .0075 inch. This form was found in June both among knobbed hairs and in galls on the sugar maple, but there appeared to be only one species represented.

The gall is very slender, tapers to both extremities, and bears a strong resemblance in general form to the nail galls described by Prof. C. V. Riley from the leaves of Ampelopsis. The walls are uniformly thin, and present no internal roughness. The height is about .19 inch, and the diameter .045 inch. Phytopti were abundant in these galls collected at Bloomington, Illinois, June 22, 1881,

Phytoptus quadripes, Shimer.

Produces galls on the leaves of the soft maple, *Acer dasycarpum*, Ehrh.

This is the Phytoptus upon which Dr. Henry Shimer founded his genus *Vasates*. It is a coarsely striate species, the striæ numbering from 37 to 42. The length is about .008 inch. The tarsal claw is slightly curved and ends in an evident knob. The feather-like appendage has four pairs of prongs. The color varies from pale yellowish to light orange. Sexually mature females. the young, and eggs occur in the galls in June.

The galls appear with the unfolding of the leaves in spring as slight swellings of the parenchyma. and as the leaf reaches its perfect size they expand usually into top-shaped galls, arising from the upper side of the leaf. The form varies to some extent, some of the galls being discoid or more or less spherical, while occasionally two galls have a common neck and opening. At first the color of the galls is like that of the unfolding leaf, dull purple or green; later it assumes the light green color of the veins and veinlets; and still later changes, in many cases, to purplish. Towards the end of summer it dries up and becomes black. The outer surface is smooth, but the walls are broadly and irregularly impressed, making a very uneven outline. On the under side of the leaf the position of the galls is usually indicated by an impression with a tuft of white hairs in the center, which tuft covers the opening into the gall. Occasionally the opening and tuft are borne upon a slight elevation. The height of one of the largest galls, measured from the upper side of the leaf, was .1 inch; the diameter was .13 inch. The galls are attached at the sides of the veins, and are so numerous on some leaves as to cover the entire upper surface. I have seen trees on which there were very few ungalled leaves, and most of them had curled up and were of a greenish-yellow hue. 310 galls were counted on one leaf. Dr. Shimer says thousands occur on some leaves.

Phytoptus, sp.

Gives rise to growths of hairs on the leaves of the box elder, *Negundo aceroides*, Moench.

Few specimens of this Phytoptus have been seen, though the growths have been carefully searched for them. One of those examined had 45 transverse striæ, and was .005 inch long.

The galls or cecidii consist of mats of tangled white hairs on the under side of the leaves, situated in slight concavities; on the upper side of the leaves the cecidii are seen as correspondingly slight convexities of the surface. The younger leaves and those of shoots at the base of trees are sometimes almost entirely converted into cecidii, the peculiar hairs appearing even on the upper side of the leaves. Such leaves never expand, but curl up and seem, from the abundance of the hairs, to be clothed with a fine mealy substance. These growths are similar to cecidii of certain oaks.

The growths are very abundant on box elders planted for shade on the streets of Normal, Ill., and have been seen on young trees in the nurseries of the neighborhood.

Phytoptus fraxini, n. sp.

Produces galls on the leaves of the green ash, *Fraxinus viridis*, Michx.

This is a very finely striate species, the striæ numbering from 78 to 81. In one example 70 striæ were counted, but as in others the number was so uniformly above 70, a mistake may have been made in counting. The feather-like appendage has two pairs of widely divergent prongs. An example mounted in glycerine measures .048 mm. in length. Eggs and young occur in June.

The light-green color of these galls so strongly contrasts with the dark leaves that the latter appear at a little distance to be spotted with light. It is a depressed wart-like gall. The center of its cavity is about in the plane of the leaf, as the projection above and below is nearly equal. The outer surface is variously indented, in some cases as if with the finger nail. The outline seen from above is elongate, circular, or quite irregular. The opening beneath is a slit, surrounded by a raised lip clothed with white hairs. One or more folds with many-celled hairs at their free edges project into the interior, dividing it into more or less perfect compartments. The median of these folds is usually largest, and sometimes reaches the bottom of the cavity just over the opening. Side folds may be formed from the primary ones. The largest gall measured was .13 inch in diameter and .13 inch in height, measuring the projection on both sides of the leaf. Dr. F. A. W. Thomas describes a still more peculiar gall from a European Fraxinus.* This gall was abundant in Central Illinois during the summer of 1880 and 1881.

In August of 1882 the trees were again examined, but not a single gall was found. The early part of the season had been very damp, and this had probably exterminated the mites.

Phytoptus, sp.

Produces galls on the leaves of the white ash, *Fraxinus americana*, Linn.

Striæ from 58 to 58. Feather-like appendage with two pairs of prongs. Length .007 inch. The hairs on the underside of the cephalothorax are easily seen in this species.

The gall resembles very closely that on *Fraxinus viridis*. Like that it projects equally above and below the leaf. The upper and under surfaces have a slight clothing of white hairs. The walls are thick and are produced into the cavity. The height, measuring that above and below the leaf, is about .085 inch and the diameter is about the same.

A very peculiar cecidum, quite different in character from the above, was also found on the white ash, but no Phytoptus was found in it. It consisted of innumerable small, deformed leaves and twigs which had been prevented from developing by the mites. The whole mass dries up and remains on the trees during the winter, at that time resembling a fungoid growth

Both of these cecidii occurred at Bloomington, Ill., in June, 1881.

Phytoptus ulmi, n. sp.

Produces galls on the leaves of the white elm, *Ulmus americana*, Linn.

A slender species, with from 67 to 70 striæ. Prongs of the feather-like tarsal appendage, three. Length of specimens preserved in alcohol .17 mm.

In general form this gall resembles that found on the leaves of the soft maple, but it is smaller, more slender and contracts less abruptly to the neck. It is from .077 to .09 inch high, and .055 to .06 inch in diameter. It differs from the gall on *Acer dasycarpum* further in having scattered unicellular hairs growing from the outer surface. There is a tuft of pubescence over the opening beneath. The walls are rather thick, with numerous folds projecting into the cavity. The color is at times of the same dark hue as the leaves or it may be light yellowish-green. The gall occurs sparingly on shade trees at Normal, Illinois, and young forest trees in the neighborhood of Bloomington are sometimes badly galled. The egg, young, and adult of the mite, have been found in the galls in June and July.

Phytoptus, sp.

Produces galls on the leaves of the heart-leaved willow, *Salix cordata*, Muhl.

The mite has 63 transverse abdominal striæ.

The gall is a wart-like excrescence sometimes projecting above the leaf, sometimes below, and again equally above and below. In some examples the leaf is folded up around the gall forming a more or less complete rim. Many of the galls are produced above into nipple-shaped prominences. The color may be purple or pale green. A specimen measured was .083 inch in depth, and .065 inch in diameter.

Phytoptus salicicola, n. sp.

Produces galls on the leaves of the long-leaved willow, *Salix longifolia*, Muhl.

Striæ of abdomen 46. Feather-like tarsal appendage with three pairs of prongs. Length .0075 inch. Abundant in the galls in June.

This gall is one of the most remarkable deformations I have seen. It consists of a narrow longitudinal upward fold extending sometimes the entire length of the leaf. Usually there are two of these folds on each leaf one on each side of the midrib. They may be close to the midrib, midway between it and the margin, or at the margin itself. In cases where the fold begins next the midrib at the base of the leaf, it may gradually leave it so as eventually to form a mere fold of the margin. The opening is a narrow slit running along the under side of the leaf. Color, as seen in the latter part of June, brown. My attention was drawn to this gall by the peculiar appearance of the willow leaves due to the lessening of their widths by the fold. A clump of shrubby willows growing in the margin of a shallow pool of water in the vicinity of Normal, Ill., was badly infested by the galls.

Phytoptus querci, n. sp.

Produces galls on the leaves of the bur-oak, *Quercus macrocarpa*, Michx.

The mite is long and slender, and in a specimen seen among washings from a cecidium, there appeared to be an abrupt descent in the outline of the back from the abdomen to the cephalothorax. Length .005 inch.

The gall is large, greenish-yellow, entirely open below and slightly convex above. The hollow is densely filled with brown pubescence. The form is variable but the outline usually regular. The surface is smooth, or slightly roughened by the veinlets. Some of these galls grow downward instead of upward and form brown velvety buttons on the under side of the leaves. Specimens measured were from .1 inch to .4 inch in diameter. Thirty galls have been counted on one leaf. This is a common gall in Northern Illinois and Indiana, and has been found occasionally in the central part of Illinois.

Phytoptus thujæ, n. sp.

Occurs on the leaves of the American arbor vitæ, *Thuja occidentalis*, Linn, in summer, and in the buds and under the leaves in winter.

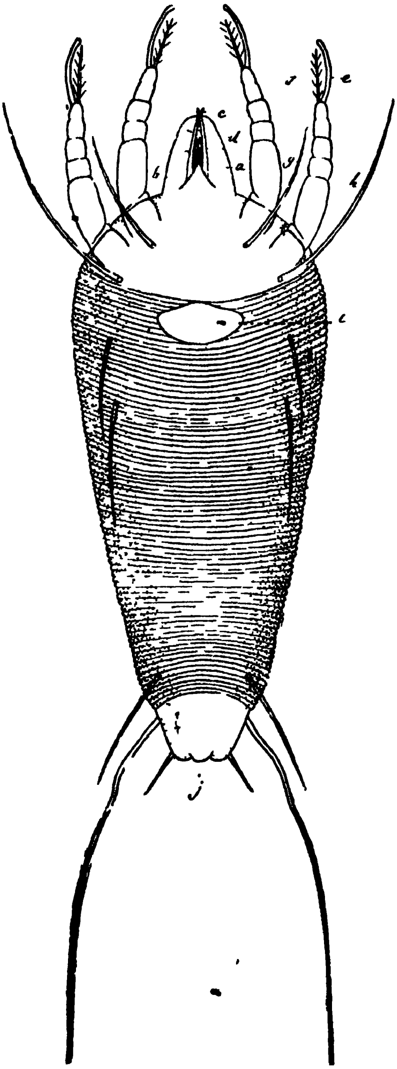

Fig. 30—*Phytoptus thujæ* (ventral view.) *a*. rostrum; *b*, labium; *c*, cheliceræ: *d*, appearance of joints seen on the rostrum; *e*, tarsal claw; *f*, feather-like tarsal appendage; *g*. one of the first pair of hairs on under side of cephalothoax; *h*, one of the second pair of hairs on the under side of cephalothorax; *i*, genital plate· *j*, abdominal sucker.

Adults of this mite measure from .005 to .0065 inch in length, with the greatest transverse diameter about .002 inch. They are whitish and semi-transparent. Of the three pairs of hairs attached to the dorsal surface, the first pair is attached at the posterior margin of the cephalothorax, the second between the last two abdominal striæ just before the terminal sucker, and between the hairs of this pair is the third pair, consisting of two short and straight hairs. The hairs of the second pair are abruptly bent at about the fourth of their length from the attachment. The first of the three ventral pairs of hairs is twelve, and the second twenty-four, striæ behind the cephalothorax; the third pair is attached six striæ in advance of the terminal sucker. The legs are strongly compressed, project downwards, and the feather-like tarsal appendage bears five pairs of prongs. The striæ of the abdomen number about 80.

In the latter part of the summer of 1880 my attention was called by Prof. S. A. Forbes to the diseased condition of arbor vitæ hedges in and about Normal, Illinois, and upon searching the trees, this Phytoptus was found creeping about the leaves. I was inclined at the time to refer the condition of the hedges to injuries inflicted by the mites earlier in the season; for they were not sufficiently abundant at the time the examination was made to cause serious inconvenience to the plants. Since then the trees have regained their usual, thrifty appearance, and the mites, although still present on them at all times of the year, have not been more abundant at any time than they were when first discovered. The Phytoptus of the arbor vitæ spends the winter in the buds and under the margins of the leaves. It can be secured in midwinter by bringing infested twigs into a warm room.

Phytoptus pyri, Scheuten.

The interesting observations on this and the following mite are from the pen of Prof. T. J. Burrill.

Invisible to the naked eye. Under the microscope, white or with transmitted light, brown. Nearly cylindrical. Varying in size. The largest mites measure .19 mm. in length and .05 mm. in diameter. Transverse striæ 50-80.—Sorauer.

"In the spring of the year the leaves of the pear tree as they unfold from the bud, are often studded with small red spots which, upon closer looking, are also seen to be slightly thickened areas of the leaf. The red soon changes to a brown color, indicative of the death of the cells and tissues of the affected spot. When very numerous, as these spots often are, they coalesce, forming patches of various sizes, not unfrequently covering large areas of the leaf, in which case the leaf usually prematurely falls. The common name, pear-leaf blister, has been not inappropriately given to the disease. The cause of the difficulty is the above-named mite, originally known only in Europe where it was discovered and named *Typhlodromus pyri* by the German naturalist, Scheuten. It was, however, introduced into our country many years since, having no doubt been brought over with pear trees, of which the importations have sometimes been large. There are many localities with us now where no signs of the disease are to be found, but the pest is very widely distributed throughout the United States, notwithstanding the feeble powers of locomotion possessed by the mite. From the blisters or galls of the leaf the mites pass in early autumn to the buds, among the scales of which they find the needful protection for the winter, and it is mostly in this condition that distribution is accomplished by the affected stocks, cions or trees sent out from the nurseries. However, some of the mites do not escape from the leaves before they fall, and in this case may be scattered in an orchard by the wind. Their injurious operations are begun in April upon the undeveloped leaves in the bud. Here, as in other cases, they gnaw through the epidermis of the under side of the leaf and infest the pulpy tissues within, depositing their eggs and multiplying by dozens or scores in the discolored area.

It is not hazardous to say that the only remedy within practical reach is the total destruction of the mites by pruning and hand-picking. Before the number becomes very great upon a tree the careful gathering and burning of the affected leaves can be accomplished without serious difficulty, and by following up the process for a few weeks a perfect cure may be relied upon. If, however, all or nearly all the leaves are invaded, a severe pruning in winter or spring (burning the twigs) should precede the attempt to free the tree of the pest by the summer work upon the leaves.

THE VERBENA MITE.

The cultivated verbenas are subject to two diseases which cause much annoyance to the propagators and growers of these beautiful flowering plants. On is known as *mildew*, the other as *black rust*. These two maladies are entirely distinct in origin as well as in appearance, yet they have been, unfortunately, much mixed in the literature upon the subject, as well as in the popular use of the terms by florists. The first appears as a white, mealy powdering of the leaves, though the latter, after a time, die in spots or altgether, and then become dark colored. It is this latter condition that has caused many to misuse the name more correctly applied to the second disease, This mildew is a mold-like fungus growing upon the surface of the leaves and stems, and absorbing by contact the

* Specimens of this mite were sent me for examination by Prof. Burrill, and prove to belong to the peculiar genus Dendroptus, Kramer, and to the family Tarsonemida of Conestrini and Fanzago. They seem to represent a new species, and will be described in a later paper. Other species were discovered by me, several years ago, on the soft maple (*Acer dasycarpum*) and arbor vitæ (*Thuja occidentalis*), and they would thus appear to have a wide range of plant food. Those I have noticed have always been very rare. Professor Burrill's observations show that they may become very abundant, and that we have in them a third group of plant-mites which may commit as serious depredations as the spinning mites and Phytopti. Dr. Kramer is reported as stating that galls may be produced by species of Dendroptus which are not distinguishable from those of Phytopti. I have found Dendroptus in growths which were undoubtedly produced by a Phytoptus, and I am not satisfied that the former ever cause growths of their own. In order that the mites may be recognized where injuring plants, I subjoin a brief description:

Very small, almost invisible to the naked eye. Body flattened, oval in outline when viewed from above; anterior part separated from the posterior part by a distinct groove. Legs 8; the two anterior pairs widely separated from the two posterior pairs. Three anterior pairs of legs, essentially alike in both sexes, the last article having two divergent claws with a disc or *plantula* between them. Fourth pair of legs in the female almost rudimentary, consisting of but two articles and terminating in two long hairs. Fourth pair of legs in the male consisting of four articles, the second of which is very large and expanded, and flattened within; the fourth article is a simple, strong claw. There are a few scattered hairs on the body, and Dr. Kramer describes the integument as made up of imbricated rings, but these are so indistinct that they will not ordinarily be seen.—H. G.

nutritious juices of the plant. It also occurs abundantly on the wild verbena plants native in our own region, and often conspicuously reduces their usual vigorous appearance.

The term black rust is distinctively applied to a peculiar discoloration and enfeeblement of the youngest, terminal part of the stem and youngest leaves. Most of these parts assume a dark purplish color, but sometimes a sickly yellow instead. The changed color is not due to the death of the leaves or their parts, as in the other case, but occurs while growth is still in progress. With the effects of mildew the plants are more disposed to grow slender and weak, but tall; where attacked by the black rust, however, terminal growth is retarded, and flowering is almost wholly prevented. This latter disease is only known on the cultivated plants, and as far as observed by the writer, only on the verbena, although something of similar appearance occurs on others.

The agent is a mite which works on the surfaces affected, where also it deposits its eggs and completes its development. When the plants are removed from the house to the open grounds the enemy accompanies them and lives upon them during the summer, to be transferred very often again to the house, with the cuttings from which propagation is practiced. Much injury and consequent dissatisfaction occur. The living, crawling animal, with its sharp mouth-parts, is much too small to be seen by the unaided eye on the plants, and even with a good hand magnifier it requires good handling, and perhaps special practice, to readily make them out. But an affected leaf, under a compound microscope with an inch objective, may be found swarming with the mites in various stages of development.

They are killed by hot water at a temperature of one hundred and twenty (120) degrees Fahr. The plants may be safely immersed in such water for a half minute, and as this is practicable with potted plants, a means of cure is accessible to all. It is also probable that an emulsion of coal oil will effectually destroy the mites without injury to the plants."

REMEDIES FOR MITE ATTACKS.

The remedies usually employed for mite attacks are such as have been found useful in destroying aphides. Sulphur applied in several ways and combinations is the remedy employed with most success. Simple flour of sulphur applied to the moist leaves is recommended by Townend Glover as a means of destroying the red spiders which cause rust on cotton. A mixture of soap, sulphur and water, and also soapsuds and quassia water, are others which may be found useful. Moisture, for some reason, is obnoxious to mites, and thorough and repeated drenchings of the infested leaves with pure water will be found sufficient in most cases to stop their depredations. To be effective, other applications will need to be so thrown upon the under side of the leaves as to reach the mites, for some of them are very tenacious of life. I have kept Phytopti floating on glycerine twenty-four hours, and found them, at the end of that time, apparently as active as when taken from the leaves. The gall-producing Phytopti cannot be treated as readily as those which live exposed on the leaves, since the former are protected by the growths in which they live. Fortunately, they are not ordinarily actively migratory, and spread very slowly from the trees, and even from the branches on which they secure a lodgment. This fact is of importance to us, for, by plucking off the galled leaves when they first appear and burning them, the mites can be prevented from increasing to an injurious extent. A sudden change of temperature has, it is thought, resulted favorably to the gardener by destroying mites. Boisduval tells us that the work of the red spider of hot-houses may be checked by taking the infested plants into a cool room. Carrying such plants into the open air has a similar effect, it only being necessary to keep the roots warm with mulching or earth to enable them to stand the change. Other mites and the larvæ of the lace-winged flies prey upon plant mites, and doubtless do good service in reducing their numbers. The following useful suggestion is taken from "A Manual of Injurious Insects," by Eleanor A. Ormerod:

"Looking at this point of sulphur being generally an ingredient in washes or applications for the destruction of Red Spider and other Acari, and the circumstance that, in its crude state, it does *not* combine with most of the fluids used for this purpose, may account for frequent failures in home-made applications. In order to make it combine with whatever liquid may be used, the sulphur should be boiled with an alkali, and the following recipe has been recommended: One pound of flour of sulphur and two pounds of fresh lime boiled together in four gallons of water; or, to save the trouble of boiling, the sulphuret of lime may be purchased and used thus: of this sulphuret, take four ounces; soft soap, two ounces to each gallon of the water, which is to be gradually poured on, the mixture being stirred during the time, when a uniform fluid will be obtained without sediment, which may be used when cold enough to bear the hand, and has been found to destroy insect pests effectually and quickly. This may be used as a syringing, or dip for infested shoots, or well rubbed with a brush into the infested bark."

OBSERVATIONS ON THE ANGOUMOIS GRAIN MOTH AND ITS PARASITES.

By F. M. Webster.

The Angoumois Grain Moth.

(*Gelechia cerealella*, Oliv.)

Order LEPIDOPTERA. Family Tineidæ.

[A small, slender, brownish gray moth, with broadly fringed hind wings, the larva of which, a slender, white, fleshy worm eats out the substance of wheat and other grains, both in the field and in store.]

This insect, which is known also under the name of "fly weevil," is one of the most destructive pests known to infest stored grain.

The rapidity with which it increases under favorable conditions, the nocturnal habits of the moth and the secluded habits of the larva, all combine to place it beyond the reach of natural or artificial restrictions, and make its appearance in any locality a very serious matter.

The New York Sun some years ago expressed the opinion that if the progress of this pest could at that time be arrested by the Government at an expense of five million dollars, it would be the best investment ever made for the people.

When we take under consideration the fact that this pest has been known to reduce the weight of grain infested by it fifty per cent, within a few months, the above figures do not seem in the least exaggerated.

But the habits of the insect, and its confusion with other grain feeding species, render it difficult to ascertain where it really occurs, or exactly when it first appears in any locality; and it is usually not until it has become fully established that it is noticed by farmers and others engaged in the growing and handling of grain.

HISTORY.

The history of this species reaches back nearly one hundred and fifty years, when Réaumur found it to be very injurious to stored barley at Luçon, in the province of La Vendée, France, and learned that it also destroyed wheat.

It continued to increase in numbers until the year 1760, when it had become distributed over the adjacent provinces, swarming in granaries and fields. Its depredations were then frightful, the damage to wheat being not only so great as to deprive the inhabitants of the means of paying their rent and taxes, but threatening them with famine and pestilence from want of wholesome bread[2].

It seems to have continued to work more or less damage until 1838, when Dr. Herpin,[3] who was engaged in a study of the insect, stated that while it had disappeared somewhat from the central districts, it had continued to spread in others, and expressed fears of a recurrence of the troubles of 1760; but these anticipations do not seem to have been realized. On the contrary, the pest must have greatly decreased in number; for in 1867 Dr. Boisduval,[4] an eminent French authority, stated that it was not found by entomologists of that time. The first to call public attention to its presence in America was Colonel Landon Carter, of Sabine Hall, Virginia, in a communication to the American Philosophical Society of Philadelphia, in the year 1768.

Colonel Landon's communication was published in the Transactions of the Society, where it was followed by some remarks by the committee of husbandry, to the effect that "it was said that injuries to wheat by these fly weevils began in North Carolina about forty years previous," which would carry the record back to about the year 1728.

M. Louis A. G. Bosc, who was sent to this country by the French government in 1796, and resided for some time in Wilmington, N. C., found the moths so abundant in that state as to extinguish a candle when he entered his granary in the night.

From these two states—Virginia and North Carolina—it seems to have spread over the state of Kentucky, and the southern part of Ohio, Indiana and Illinois, and was found also in Massachusetts as early as the year 1844.

The precise date of its first appearance in Illinois, it is obviously impossible to determine.

It would naturally follow the direction of emigration, particularly where the climate was suited to its development, it being almost impossible to transport grain from districts where the insect is abundant, without including with it more or less in which the worms or eggs are present.

Dr. Brackenridge Clemens states in the Proceedings of the Philadelphia Academy of Natural Sciences for 1860, that he had obtained specimens from wheat distributed by the Department of Agriculture in the years 1854-55.

The *Farmer's Review* of July 28, 1881, calls attention to the presence of a new pest, a small moth, that had appeared in the grain fields, whose larva burrowed into and ate out the centre of the kernels, and also states that this larva attacks corn, not only in the ear, but after it has been shelled and placed in store.

Messrs. Halliday Bros., of Cairo, Illinois, say that it has caused more or less trouble in the elevators of that place for at least ten years.

Aside from the sample of wheat infested by this insect received during October, 1882, from St. Johns, Ill., it was found to have done considerable damage in the vicinity of Carbondale, by Mr. John Martin.

In this case the wheat was attacked in the shock and the depredations were carried on during the time it was in stack, and while in store, damaging the crop from one-fourth to one-third.

Some of this grain I saw during April of the present year, but could get no trace of other ravages among farmers north of St. Johns or south of Carbondale.

DESCRIPTION OF THE MOTH.

The adult insect has been so carefully described by Dr. T. W. Harris (Injurious Insects, 2d Ed., p. 506), that I shall copy his description in full:

"The wings expand a little more than half an inch. The head is smooth, and not tufted. The antennæ are thread-like, with distinctly marked joints.

"The feelers are long, and curved upwards; the terminal joints naked, acute, and blackish near the tip; the second or middle joint rather shorter and thicker, hairy beneath, and blackish on the outside; the basal joint very short and hairy.

The tongue makes several spiral turns, and when extended, is about half the length of the antennæ. The body and fore wings are of that tint of pale brownish-gray which the French call coffee-and-milk color, and have the lustre of satin.

"The fore wings are long and narrow, and are pointed at the end; together with their fringes, they are more or less sprinkled with blackish dots, especially near the tips.

"The hind wings are blackish, with a leaden lustre; they are narrow, and very suddenly obliquely contracted to a point at the tips; they are entirely surrounded with a blackish fringe, which is wider on the inner margin than the wing itself; they are folded lengthwise, when at rest, beneath the upper wings.

"The fore legs are blackish, and the hindermost legs are fringed with long hairs on the inner side."

DESCRIPTION OF THE LARVA.

When first hatched, the larva, or caterpillar, although not thicker than a hair, immediately burrows its way into the kernel.

When full-grown, it is about one-fifth of an inch in length, rather robust, gradually tapering posteriorly from the second segment.

Head brown, the lateral margins light, as is also the region of the ocelli; the anterior margin a little darker. The mandibles are strong, bisetose,* brown, with the inner margins nearly brown. They are quadri-dentate, the lower tooth being the larger. From this the teeth gradually decrease in size, the uppermost being the smallest. The other mouth parts and antennæ are brown; the latter are short, three-jointed, terminating with a bristle.

The ocelli are white, six in number, arranged in the form of an elongate letter C, with the space enclosed varying from very dark-brown to nearly black.

On the head, body and legs are sparsely-placed white, setaceous hairs; those on the head, first and last segments, and legs, are rather long. On segments two to twelve, inclusive, these hairs are less prominent, being placed in two transverse rows, those of the anterior row being much the shorter. On the first segment the hairs of both rows are equal; on the thirteenth segment, they are also equal, but, from the form of the segment, they are placed in a circular position.

The body, with the exception of the spiracles, is white, smooth, and densely covered with minute, erect spinules, which can only be seen under a powerful glass. Traces of brown patches appear, in some examples, on the dorsal surface of the first segment. Spiracles, dorsal hooks, and minute terminal hooks on the pro-legs, brown.

The legs are rather large at base, but taper rapidly, each terminating in a small hook.

The pro-legs, ten in number, are small, wart-like, and terminate in two or three minute, robust hooks. (Curtis, in "Farm Insects," p. 312, says that they terminate in a complete coronet of hooked spinules, but this is certainly an error.)

DESCRIPTION OF THE PUPA.

This is a little over one-fifth of an inch in length, the anterior extremity being obtuse, the posterior more acute, and surrounded by a ring of sparsely-set setæ.

Head, thorax and wing-pads dark, the abdomen lighter-brown, the wings nearly reaching the posterior extremity. Eyes in mature pupæ distinctly visible, and black.

On the abdomen are rows of setæ, placed as follows: a double row on the margin, above the spiracles, placed in pairs; just below and close to the spiracles, a single row, one on each segment; each side of the middle line of the body, another double row, the outer being placed on the posterior, the inner on the anterior part of the segment.

On the inner side of the breast are a few scattered hairs, and on the neck two long, slender, conspicuous bristles.

HABITS OF THE MOTH.

The moth is nocturnal, and double-brooded under ordinary conditions, but a high temperature so actively hastens the transformations that the number of broods and time of appearance is somewhat variable.

Dr. T. W. Harris, who bred the moths for three years in succession, says that they appeared in considerable numbers in June and August, which is probably about the time the broods normally appear. But infested wheat kept in the laboratory since October, 1882, has produced moths continually up to date, (May 10, 1883), these being more numerous during December and January.

The moth passes the winter in the larva state, but usually in a cocoon within the grain. It then passes through the pupa state, which occupies but a short time, coming forth probably in May or June, according to latitude and temperature. The moths pair, and the females deposit each from sixty to ninety eggs on the kernel, in clusters, usually in the longitudinal channel. If the moths that appear in June are allowed to do so, they will escape to the fields and deposit their eggs in the young kernels of the new crop; but otherwise they will deposit them on the kernels of grain in the bin where they themselves were bred. The moths from the eggs come forth probably about August, and constitute the second brood.*

The moths of this brood pair and deposit their eggs in the same manner as their progenitors, but Olivier states that those which come forth after the harvest make no attempt to escape, their instinct seeming to have informed them that no more food remains in the field for the support of their posterity.

I have sharply defined these two broods, in order the better to give their life history, but in localities where the temperature is favorable, moths in greater or less number will be noticed during the entire year. In fact, only about a month's time is required from the time the egg is deposited to develop the moth.

HABITS OF THE LARVA.

In from four to seven days after the eggs are deposited by the parent moth, the young larvæ appear, and although very minute, immediately penetrate the grain, usually at the point where the plumule comes forth, this being the part most easily pierced. As but one worm can occupy the same grain, the first to hatch will enter the kernel on which the eggs were deposited, while the others must seek homes in adjoining grains. There is very seldom, if ever, more than one found in each grain. I have never found more than one. Having once entered the kernel, the larva rarely leaves it, except as a fully developed moth; although I have sometimes found one wholly or partly within an adjoining grain. In all such cases which I have noticed, the grain originally occupied was attached to the other by a cylindrical passage, constructed by the worm of the same material as its cocoon.

As soon as the young worm burrows into the grain, it proceeds to feed upon its substance, gradually enlarging its excavation as it increases in size, leaving the clean, almost transparent hull entire, excepting the original avenue of entrance, which remains untouched, or at most, is only partly filled with loose particles of excrement.

While there is abundant substance in a grain for the support of one worm under ordinary conditions, there is pretty good evidence that the larvæ are often obliged (probably by a low temperature, which would greatly prolong their lives in this stage, and consequently necessitate additional food), to devour their excrement once or twice or even a third time. On the other hand, among grain kept in the laboratory during the winter, in a favorable temperature the greater part of the time, I have found kernels containing from one-fourth to one-third of the substance untouched, together with the empty chrysalis, showing that the worm had passed through its entire transformations and yet had food to spare.

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* This brood is sometimes called the first, but the usage is made here to correspond with the other papers in this report.

After attaining its full growth, the larva withdraws to one side of the grain, cuts out a disc to provide for the escape of the moth, spins its cocoon, and either passes the cold season in a torpid state, or transforms to the chrysalis at once, as the case may be.

The larvæ from eggs deposited by the second brood of moths attain their full growth, or nearly so, before the first cold weather in the fall, and pass the winter in this stage, either within the cocoon or before it has been constructed.

But they may winter in almost any stage of their growth, as a low temperature only causes them to pass into a dormant state, to awake and resume work when it rises above 60° Fah. At this temperature, they mature in about three weeks. When the larva changes to the chrysalis, its head is at the circular disc which it has previously cut; the anterior extremity of the chrysalis is also in the same position, and by the aid of the setæ mentioned in the description, it pushes against this disc, and finally presses it out and makes its escape, leaving the empty shell within.

The presence of the insect, either as larva or chrysalis, in the grain is not easily detected, the kernels looking as plump and of as good color as though they were sound; but in weight their difference is instantly and strikingly apparent. I found, for instance, that, on an average, 865 grains of wheat will weigh one ounce, while it required 1,085 grains of infested wheat, from the same stack, to weigh as much,—and this too before the larvæ had finished their work. A ready method of determining the presence of the pest in grain is, to place a quantity in water, when the infested grains and those which have been eaten will generally float on the surface.

SUMMARY OF THE LIFE HISTORY.

The insect passes the winter in the larva state, pupates in the spring, and the moths appear in May or June. These pair immediately, and deposit their eggs on the young grains of the new crop in the field, if they are allowed to escape, or, if not, on the grain in the bins where they originated. These eggs hatch in from four to seven days, and the larvæ burrow into the grain and themselves transform to moths, about August, or often during the latter part of July. These moths pair and deposit their eggs after the manner of the previous brood, and the larvæ from these, nearly, if not quite all, reach maturity during the fall and transform the following spring. The number of broods and time of appearance vary greatly, with the climate and season, in warm countries broods follow each other in rapid succession during the entire year.

Heteropus ventricosus, Newport. About the 12th of October, 1882, a sack of wheat infested with larvæ of the grain moth was received from Southern Illinois, which, for want of time, was put aside for future inspection. On the 13th of November, while examining the grains containing larvæ, I noticed in a lot of fifty, three in which the worms were dead, and on them were numbers of globular, yellow objects, which proved to be a species of mite *Heteropus ventricosus*, Newport. Knowing nothing of the predaceous habits of these mites, and the limited literature at hand throwing little light upon the matter, I did not pay much attention to the fact of their occurrence, until the 12th of December, when, upon examining one hundred grains with respect to the effect of heat on the larva, I found fourteen of the latter infested by these mites.

In the meantime I had learned that this mite was known to be of predaceous habit, in both England and France, (having been first discovered by Newport, in 1849, in the nests of *Anthophora retusa*, collected at Gravesend, England,) and afterwards described by him under its present name. It had also been found in France, in 1868, by Jules Lichtenstein, of Montpellier, and described by him under the name of *Physogaster larvarum*. This gentleman found it in his breeding cages, which it so completely overran, that, as he informs me, he could not for six months breed a single specimen of Hymenoptera, of Buprestidæ, or Cerambycidæ, or of some Lepidoptera. If it has been found by any other persons than these, or in any other parts of the world, previous to its discovery here by me, I have not been able to find the fact recorded,

On December 31st and January 1st, I examined one hundred infested grains of this wheat, which had been continually kept in the laboratory since it was received, and found thirty-two per cent. of the worms dead, infested by the mites.

While making these examinations I frequently threw the grains containing infested larvæ into a shallow glass dish, where they remained on my table until the warm weather during the latter part of February, when the temperature of the laboratory at night was much higher than it had been during the previous cold weather. The effect of the change was soon plainly to be seen. The contents of the dish began to swarm with newly developed mites, and a larva dropped into their midst was immediately attacked, and after that its life was of short duration. Larvæ placed at some distance from the dish suffered a like infection.

To test the matter I placed near the dish some weeds, in the pith of which some larvæ were hibernating, and in two days the mites had found and destroyed them. These young mites when first noticed are very minute, of elongate form, and extremely active, running about in search of larvæ; and when one is found they immediately puncture the skin and suck the juices.

In a day or two the posterior segments of the abdomen begin to enlarge, and this process continues until the inflated, bladder-like abdomen becomes ten or even twenty times the size of the cephalothorax.

During this time they have gradually lost their ambulatory powers, and remain stationary upon their victims. In the mean time changes equally wonderful have been going on within the abdomen.

Eggs are continually forming, and within these the young mites are as continually developing, passing through their entire metamorphosis, *which includes the acquisition of the fourth pair of legs,* (an exceptional character among mites) within the abdomen of the mother, from which they make their way as fast as they reach maturity.

The females are quite prolific. I have counted frequently from forty to fifty young and eggs within the abdomen, and believe that they produce even more. The mothers survive the birth of a large number, if not a majority of the young. The male I have never found, and I am inclined to believe with Mr. Newport, that the species is parthenogenous. The minute size of these young mites admits of their free access to the larvæ of the moth, through the very small opening where this made its entry, and a single mite with its progeny would be sufficient to destroy it.

That this is very often the manner of attack is proved by the fact that grains in which the larvæ is badly infested frequently have no other break in the hull by which even a young mite could gain admission. Like the larvæ on which they subsist, their development is retarded or increased by the temperature, they being quite active at a temperature of 60° Fah; but in colder weather able to remain within the abdomen of the parent for months in a dormant state, awaiting a rising temperature.

Pteromalus gelechiæ, n. s. While examining the grain containing these larvæ, I frequently found pupæ of a small hymenopterous parasite, and bred them in considerable numbers.

I at first thought these parasites might be *Pteromalus calandræ*, Howard, but Mr. Howard has pronounced it a distinct species, and undescribed.

Mr. Richard Owen, of New Harmony, Ind., in "The Cultivator" for November, 1846, is said to figure a parasite which Dr. Harris thought might belong to the genus *Pteromalus*, but as I can find no record of any description having been published in this country, I shall describe it as follows:

Male.—Length of body, 2 mm; expanse of wings, 3.8 mm; width of fore wing, 0.6 mm. Head large, broader than thorax. Antennæ slightly clavate, moderately pilose, shorter than thorax; second joint larger than first; fifth joint more slender than sixth, but broader than fourth, and as long as both ring-joints together. Thorax longer than broad; parapsidal furrows distinct; the middle femora have a long slender spine on inner side near apex. Abdomen cordate, sessile, robust, and obtusely triangular. Head, face, and dorsum of thorax coarsely cribrato-punctate, with scattered, fine hairs. Abdomen smooth, shining. Color: head and thorax steel-blue; abdomen black at tip; antennæ fuscous throughout; femora of anterior and middle pair of legs scarcely darker than tibiæ; the posterior femora dusky; tibiæ fuscous; tarsi rather lighter colored, last joint dark; base of abdomen fuscous; wing veins light brown, stigmal vein half as long as marginal, and less than one-fourth as long as sub-marginal.

The female is longer (2.5, to 3 mm) and more robust. The abdomen is more acutely triangular, and not fuscous at base; the ovipositor, which is concealed when not in use, is reddish-brown, and is passed back and forward along a ventral, median, groove; club of antennæ darker. The femora are darker, and the spine, near apex of middle femora, is stouter and longer than in the male.

Described from specimens bred from larva of *Gelechia cerealella.*

The species occurred in considerable numbers, and I found often eight to ten pupæ about a single larva. Afterwards the adult insects were found crawling about among the grains, taking wing whenever an opportunity was afforded for escape.

They probably contribute considerably toward keeping the pest in check, although I found them infesting only about three per cent. of the larvæ.

ARTIFICIAL REMEDIES.

As may be supposed, an insect passing so large a portion of its period of existence in such seclusion, is an exceedingly difficult one to reach with even palliative measures.

The principal part of the life-time of the larva is passed in the grain, with only the minute hole, by which it first entered, to admit either fumes of various herbs, or gases, powdered lime, or other substances.

Even this small avenue is cut off as soon as the worm spins its cocoon; hence it is scarcely to be wondered at that applications of this character are productive of unsatisfactory results.

Heat, however, passes through all these obstructions and penetrates the innermost recesses of the grain. Careful experiments, which I made this winter, have proven that a temperature of 140° Fah. continued for nine hours, literally cooks the larva or pupa; that a temperature of 130° Fah., for five hours, is fatal, as is also 120° Fah., kept up for four hours, while 110° Fah., applied for six hours was only partially effective. Dr. Harris states, in "Injurious Insects," p. 507, that a heat of 104° Fah., will be found effective if kept up for several days.

In order to ascertain the amount of heat which wheat could withstand without destroying its germinating qualities, 195 grains were kept at a temperature of about 150° Fah. for eight hours. Of these, twenty-two (or eleven per cent.) failed to grow; while of 312 not baked, thirty-four failed to grow, (about ten per cent.), showing that this degree of heat may be used without damage.

Curtis, in "Farm Insects," states that 190° Fah. may be used; but wheat which I kept a few hours at a temperature of 180° Fah. failed to germinate.

Nothing is gained by the use of such high temperatures, as a much lower one is equally effective. In fact a low temperature and longer time have been found to be superior.

The French long ago learned the value of this remedy, and constructed insect mills after the plan of coffee roasters; which for the farmer would probably answer a very good purpose.

For elevators they had rooms fitted up and heated by steam, where as many as eight hundred sacks were treated at a time. After being submitted to a temperature of 135° Fah., and resifted, the grain was found to be perfectly cleansed. Messrs. Halliday Bros., of Cairo, Illinois, use for this purpose a dryer, such as is in use for drying grain for export, and find that it does very good service, a temperature of 200° to 250° Fah. for five minutes being sufficient.

Of course care must be taken that *all* the grain is reached by the heat; hence, large amounts can not be readily managed.

A room of this sort could be fitted up with steam pipes, and grain treated at a small expense per bushel, particularly where steam is used as power for elevating.

The grain should be treated as soon after the moth has deposited its eggs as possible, and before the larva has reached its full growth, for then all the damage possible will have been done. The proper time, I think, will be found to be during August, or not later than September. It is very probable that wheat passed through this heating process and placed in a clean cool bin, which has been kep empty for some time previous to rid it of moths, can safely be kept during the winter, and far into the following spring, without sustaining any farther injury from this insect, if all windows or other openings are guarded by screens to keep the moths outside from entering.

Heating grain as above directed, while it destroys all insects infesting it, in whatever stage of development they happen to be at the time, does not in any way insure it against future attacks; hence care should be exercised to guard against reinfection.

Threshing grain immediately after harvest is an old and efficient remedy, it having been demonstrated again and again that wheat threshed early and stored in clean, cool, dry bins, will sustain little or no injury, while grain from the same field stacked, and thrashed later, will be found badly eaten, particularly if the stacks happen to get damp in the meantime.

Grain in such condition, if stored, will be sure to heat, and any rise in temperature causes in all cases increased activity in the pests. In fact, grain supposed to be free from insects in any stage, has been stored; and, as long as kept cool suffered no injury; but, becoming damp and heating, these pests have developed in great numbers.

For the same reason, samples of grain kept in glass jars at a moderately high temperature, as in offices, have been totally ruined, although the grain appeared all right when put up.

Elevating grain during cold weather, in order to keep it cool until late in the spring, only retards the development of the insects. When once fairly ensconced within the grain, there are comparas against the larvæ destroying the grain, if not at once, in a few weeks or a few months. If the weather is too cold, they simply suspend operations until it gets warmer. Hence, the use of any ordinary degree of cold is only a palliative, and not a remedy, unless the temperature is permanently kept below 50° Fah. Concussion is also stated to destroy the eggs and the larva, and it is not improbable that elevating grain and allowing it to drop a considerable distance would destroy many eggs.

But the wheat which has been the basis of my studies, was sent to the office direct from the threshing machine, and it has afforded ample proof that the concussion sustained by passing through the cylinder of a thresher, is not sufficient to offer any perceptible relief.

Applications of both salt and freshly slacked lime have proven unsatisfactory in experiments which I have made, and the latter, besides doing little good, probably kills the young parasitic mites, and is also said to affect the market value of the grain.

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1. Harris' Insects Injurious to Vegetation, 2d edition, p. 500.
2. Loc. cit.
3. Recherches sur la Destruction l'Alucite, ou Teigne des Graines.
4. L'Entomologie Horticole, 1867, p. 5 1.
5. Encyclopedie Methodique, Vol. 1, p. 115.

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